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# Montana Economic Study

research report

## part 1: THE MONTANA ECONOMY

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1961

Volume 2, Number 2  
Spring 1961  
University of Montana  
Missoula, Montana  
1961

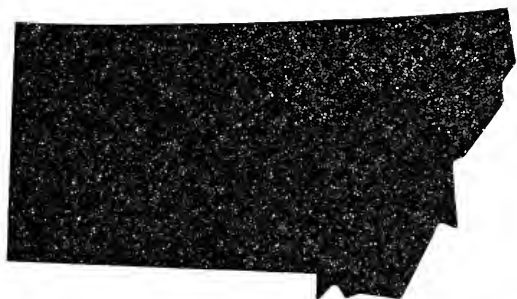
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Volume 2, Chapters 2-4  
Montana's Population, Employment  
and Income, 1950-1969  
with Projections for 1980

JUL 1 1970







Montana Economic Study  
Research Report

Project No. Montana P-31

Prepared under agreement for the Montana State Department of Planning and Economic Development, Montana State Water Resources Board and the University of Montana. The preparation of this document was financed in part through the Urban Planning Grant from the Department of Housing and Urban Development, under the provisions of Section 701 of the Housing Act of 1954, as Amended.

University of Montana  
School of Business Administration  
Bureau of Business and Economic Research

1970





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## CHAPTER 2

### Montana's Slow Growth: Population, Employment, and Migration, 1950 to 1968

During the 1950s and 1960s, both population and employment in Montana increased, but they declined in relation to national totals. The relatively slow growth of population was caused mainly by the slow growth of jobs. This chapter lays out the quantitative dimensions of employment changes and population out-migration. The discussion focuses on the reasons for the slow growth of employment and on the relationship running from the relative lack of job opportunities to population migration. The implications of persistent slow economic growth for the well-being of the state's residents are taken up in Chapter 3, which deals with income trends.

The first section of this chapter describes changes in civilian employment and population for two periods: 1950-1960 and 1960-1968. The second takes a closer look at the details of employment developments



over these entire 18 years. The final section inquires into the details of population out-migration.

#### EMPLOYMENT AND MIGRATION, 1950-1960 AND 1960-1968

Table 2.1 shows total population and total civilian employment in Montana for 1950, 1960, and 1968, together with percentage rates of change in the two magnitudes between 1950 and 1960 and between 1960 and 1968 for both Montana and the United States.

The civilian employment figures shown in table 2.1 exclude members of the armed forces stationed in Montana. Military employment is presently concentrated in Cascade County at Malmstrom Air Force Base. In 1969, about 6,000 military personnel were stationed in Montana, of whom nearly 5,000 were in Cascade County. Before Glasgow Air Force Base was closed (in 1968), about 3,500 military personnel were stationed in Valley County.

The following discussion deals only with civilian employment, and the term "total employment" will refer to the total civilian employment estimates shown in table 2.1. These totals are the sum of agricultural employment (both hired workers and self-employed farmers and ranchers), nonagricultural payroll employment, and "all other" employment, which includes self-employed workers outside agriculture and household workers. The number of agricultural jobs was estimated by the Montana Economic Study, as was "all other" employment. Payroll employment data are from the Montana Department of Employment Security.





TABLE 2.1  
 Population and Total Civilian Employment, Montana, 1950, 1960, and 1968  
 and  
 Percentage Change in Population and Civilian Employment, Montana and United States,  
 1950-1960 and 1960-1968

	<u>Thousands of Persons or Workers</u>		<u>Percent Change</u>			
	<u>Montana</u>		<u>1950-1960</u>		<u>1960-1968</u>	
	<u>1950</u>	<u>1960</u>	<u>Montana</u>	<u>U.S.</u>	<u>Montana</u>	<u>U.S.</u>
Resident Population (July 1)	593	679	+14.5	+18.4 <sup>a</sup>	+2.5	+11.0 <sup>b</sup>
Total Civilian Employment (average monthly)	228.5	236.9	+ 3.7	+12.9 <sup>a</sup>	+7.4	+15.1 <sup>b</sup>

Sources: U.S. Department of Commerce, Bureau of the Census; Montana Employment Security Commission; and Montana Economic Study.

<sup>a</sup>Excludes Alaska and Hawaii.

<sup>b</sup>Includes Alaska and Hawaii.



1950-1960: Out-migration and the "Job Gap"

On April 1, 1950, Montana's population was 591 thousand. By April 1, 1960, it had increased to 675 thousand, a climb of 14 percent. But during the same ten years, the resident population of the United States (excluding Alaska and Hawaii, which were not counted in 1950) grew about 18 1/2 percent.

Montana's slower population growth did not result from either a lower birth rate or a higher death rate. In fact, Montana's birth rate during the 1950s was slightly above the national average, and its death rate was about the same as the national average.

Rather, the slower growth of the state's population was caused by net out-migration--an excess of persons moving out over persons moving in. It is estimated that in the absence of any migration--in or out--the 1960 Census would have shown a total population of 700 thousand, which would have meant the same 18 percent rate of growth experienced by the nation.

Interstate migration is a source of economic strength to the United States. Geographic mobility enhances the welfare, not only of those who move, but of those who do not. Willingness to migrate made possible the settlement of the country, first in the east, and then in the west, including Montana.

People migrate in search of a better life. They do so willingly (although those transferred by their employers may not always like it). Migration enables retired people to move to warmer climates if they are so inclined. Families tired of the cities can move to less-crowded places; those tired of the bucolic life can move to the



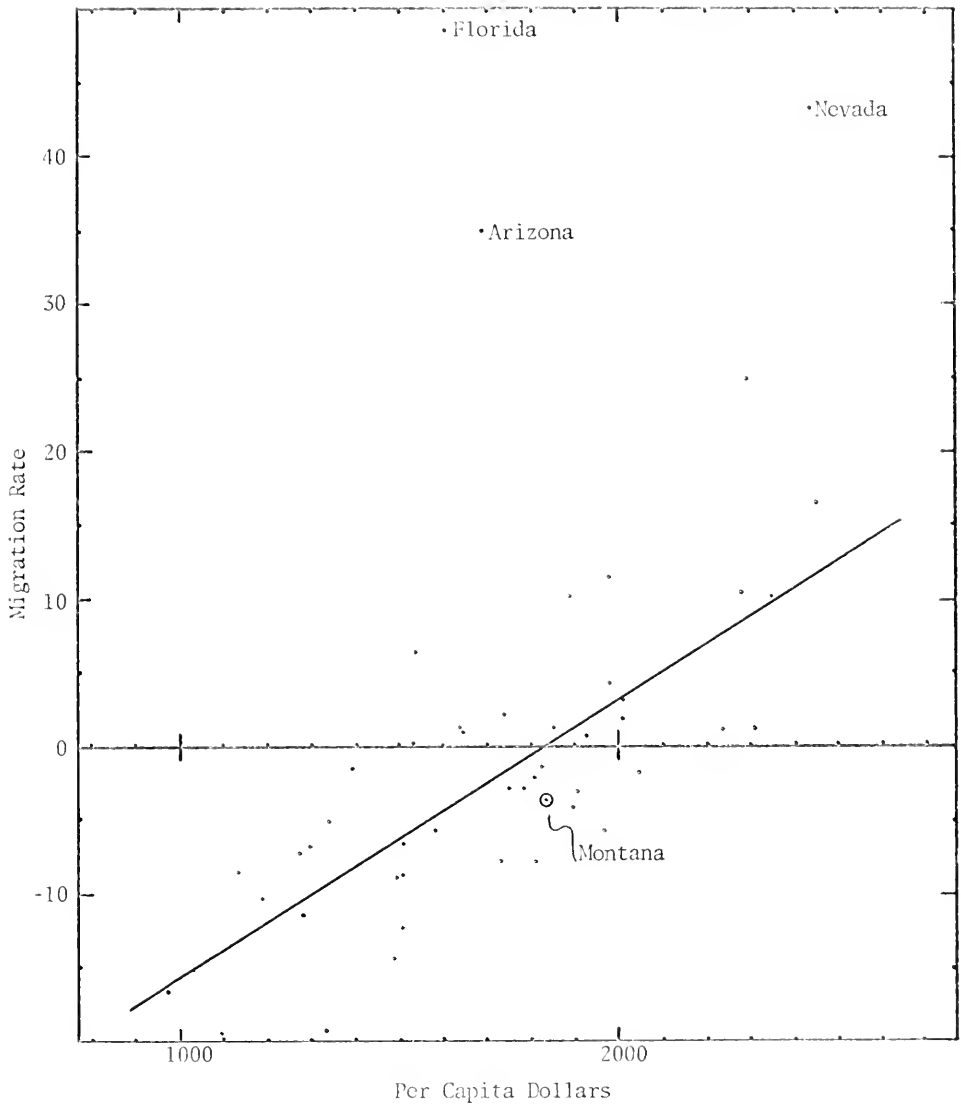
cities. Opera-lovers can move to New York, and hunters can move to Montana. The right to move must be counted as one of the most important elements of human freedom.

It is also essential to a dynamic economy. Although people move for all sorts of "reasons," the most important one is economic. The "better life" has many dimensions, but none seem to overshadow opportunities to make a living. Figure 2.1 shows percentage rates of net migration between 1950 and 1960 plotted against the average of 1950 and 1960 levels of per capita personal income for each of the 48 conterminous states. The straight line plotted through the points represents the statistically-derived average relationship (excluding Florida, Arizona, and Nevada, all affected by special factors). The point representing Montana indicates that net out-migration for the state was greater than might reasonably have been expected on the basis of the average relationship.

Montana's net out-migration was due mainly to the state's relative lack of economic opportunity. As Chapter 3 will indicate, between 1950 and 1960 the state's per capita personal income grew only 1 percent after correction for price level changes. Nationally, such real per capita personal income rose 19 percent. Job opportunities in Montana were severely limited, and the result was that job-seekers were induced to look for work elsewhere. This appears to have been particularly true of young people. The highest percentage rate of net out-migration was among persons in the 20-24 year age group in 1960. These persons were only 10-14 years old in 1950, but by 1957, had reached 17-21 years of age. Both population and employment statistics indicate that



Net Migration From 1950 to 1960 in Relation  
to Average of 1950 and 1960 Per Capita Income,  
48 Conterminous States



Sources: U.S. Department of Commerce, Bureau of the Census;  
U.S. Department of Commerce, Office of Business Economics, and  
Montana Economic Study.

Note: Each point represents one state; the closer the state to the  
0 line, the smaller the rate of net migration in or out.





out-migration from the state was relatively minor until after 1956. It therefore seems likely that most of the people in this age group had reached labor force status at the time they migrated.

Young workers generally represent the most mobile element of the work force. Most have little to lose by moving, and most have high aspirations. There is nothing wrong with this. Many young people, especially the better-educated ones, want to see the rest of the world, and to be on their own. Moving to a big city can be a rewarding and exciting experience for a person raised in Montana. No one, presumably, would want to pass a law prohibiting such moves.

The striking feature of the migration statistics, however, is that so many more left the state than came here. This fact is not surprising when one considers the employment statistics (although it should be noted that employment statistics for 1950 are highly imperfect). We estimate that total employment in Montana rose 8.4 thousand, or 3.7 percent, between 1950 and 1960. But we estimate that the "natural" growth of the labor force--the growth that would have occurred had there been no migration, was between 29 and 30 thousand. Obviously an employment rise of 3.7 percent could not accommodate this increase.

The inevitable consequence was out-migration, rising unemployment, or both. It turned out to be both. The 1950 Census indicated that the number of Montanans unemployed in early April of that year was 11.7 thousand, or 5.1 percent of the census labor force estimate. The national unemployment rate was identical. In 1960, the census showed an increase in the number of unemployed to 16.8 thousand, or



6.6 percent of the April labor force. By then, the Employment Security Commission was publishing monthly and annual data on Montana unemployment. For the year 1960, the state's unemployment rate was 6.7 percent, almost the same as the April figure reported in the census. Nationally, the unemployment rate in 1960 was only 5.6 percent.

Thus, in addition to the 8.4 thousand increase in the number of jobs in the state, there was an increase of some 5.1 thousand in the unemployment rolls. Altogether, the resident labor force is estimated to have increased by 13.5 thousand (8.4 thousand plus 5.1 thousand) over the decade. Given our estimate of the "natural" growth of the labor force--29.4 thousand--this implies that about 16 thousand left the state to look for work elsewhere. Table 2.2 shows this calculation.

Also shown in table 2.2 is an estimated "job gap." This is the amount of additional employment growth that would have been required to prevent out-migration of the labor force. Our calculation assumes that stopping net out-migration would have required a growth in employment sufficient to absorb the entire "natural" growth of the labor force and reduce the 1960 unemployment rate to the national average (5.6 percent of the civilian labor force).

Although Montana's net out-migration during the 1950s was substantial, it was not nearly as heavy as that experienced by many other states. As figure 2.1 shows, 19 states experienced more rapid out-migration than Montana, and in 12 states the percentage rate was more than twice as great as Montana's.



TABLE 2.2

Estimates of Montana Civilian Labor Force Migration  
and the "Job Gap," 1950-1960  
(thousands of workers)

	Change in Civilian Employment	+	Change in Unemployment	=	Change in Civilian Labor Force
If no migration	26.5		2.9		29.4
Actual	<u>8.4</u>		<u>5.1</u>		<u>13.5</u>
	18.1		-2.2		15.9
	"Job Gap" (no migration change in employment less actual change in employment)		Excess Unemployment (no migration change in unemployment less actual change in unemployment)		Labor Force Migration (no migration change in labor force less actual change in labor force)

Source: Montana Economic Study.

Note: The change in unemployment "if no migration" is the change that would have occurred had Montana's average monthly unemployment rate in 1960 been the same as the national unemployment rate in that year. For 1950, the census unemployment rate for early April was used since no average monthly unemployment rate is available for that year.



In general, there was a movement away from the interior and to both coasts. Among the states with the highest rates of net out-migration were Arkansas, Mississippi, West Virginia, North Dakota, and South Dakota. Most of the interior states that did experience net in-migration, including Illinois, Indiana, Michigan, and Ohio, were industrial, not agricultural states. Montana's net out-migration rate was actually smaller than might have been expected, given the state's heavy dependence on agriculture.

#### 1960-1968: Intensified Out-migration

Population growth slowed in the 1960s, both nationally and in Montana. For the nation, the major reason was a declining birth rate. There was a decline in the proportion of the total population accounted for by females of child-bearing age and, in addition, a decline in the fertility rate among these females. For the U.S. as a whole, population increased 11.0 percent between 1960 and 1968. For Montana, the increase was only 2.5 percent, from 679 thousand to 696 thousand.

As in the previous decade, the disparity between rates of population growth in Montana and the United States reflected mainly net out-migration from the state. The Census Bureau estimates that about 48 thousand more people left Montana than moved here between April 1, 1960 and July 1, 1968. In the absence of migration, then, the state's population would have reached 744 thousand by 1968.

Net out-migration between 1960 and 1968 averaged about 5,700 persons, more than twice as much as it had been in the 1950s. Again, most of the moving was accounted for by persons of labor-force age.





In fact, net out-migration of persons who had reached retirement age by 1968 was much lower than it had been during the 1950s.

The main reason for continued movement out of the state was again the slow growth of employment opportunities. Total civilian employment rose 17.5 thousand, a considerably faster rise than occurred during the 1950s. But we estimate that, in the absence of any migration, Montana's civilian labor force would have grown by 31.1 thousand during 1960-1968.

This was a period when the nation overcame the mounting unemployment that had plagued it during the late 1950s and early 1960s. Nationally, unemployment fell from 5.5 percent of the labor force in 1960 to 3.6 percent in 1968. The Montana unemployment rate also fell, from 6.6 percent in 1960 to 4.7 percent in 1968. The number of unemployed Montanans declined from an average of 17.0 thousand in 1960 to 12.8 thousand in 1968.

Of the 17.5 thousand growth in jobs, then, 4.2 thousand involved reduced unemployment, leaving 13.3 thousand extra positions open to absorb the growing labor force. Since the "natural" growth of the labor force amounted to 31.1 thousand, implied net out-migration of workers added up to 17.8 thousand, or about 2.2 thousand per year. This was considerably higher than the 1.6 thousand annual average for 1950 to 1960. The job gap was clearly increasing during the 1960s.

Table 2.3 shows the details of our estimate of this increasing job gap. As before, it assumes that to stop net labor force out-migration would have required job opportunities sufficient to absorb



TABLE 2.5

Estimates of the Montana Civilian Labor Force Migration  
and the "Job Gap," 1960-1968  
(thousands of workers)

	<u>Change in Civilian Employment</u>	<u>+</u> <u>—</u>	<u>Change in Unemployment</u>	<u>Change in Civilian Labor Force</u>
If no migration	57.8		-6.7	51.1
Actual	<u>17.5</u>		<u>-4.2</u>	<u>13.3</u>
	20.3		-2.5	17.8
	"Job Gap" (no migration change in employment less actual change in employment)		Excess Unemployment (no migration change in unemployment less actual change in unemployment)	Labor Force Migration (no migration change in labor force less actual change in labor force)

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Source: Montana Economic Study

Note: The change in unemployment "if no migration" is the change that would have occurred had Montana's average monthly unemployment rate in 1960 been the same as the national unemployment rate in that year.



the entire "natural" increase in the labor force and bring the state's unemployment rate down to equality with the national unemployment rate. For this to have happened, total jobs would have had to increase by 37.8 thousand, or 20.3 thousand more than the actual increase in employment.

The 1960-68 job gap, as we have estimated it, averaged about 2,500 per year, compared with an average of about 1,800 per year in the 1950s. The slow growth in jobs is perhaps the most revealing single indicator of the lack of economic vigor in the state, and a detailed examination of the employment statistics therefore offers considerable insight into the economic developments of 1960-1968.

#### A DETAILED LOOK AT EMPLOYMENT, 1950-1968

Employment statistics for the state are not all that they might be. The numbers used here represent a composite of official figures for payroll employment outside the agricultural sectors plus estimates of agricultural and nonagricultural self-employed and household workers based on census data and our own work. These latter data are subject to error, but they are probably not grossly inaccurate.

In 1950, average monthly total employment in Montana was 228.5 thousand. The most important single employment category was agriculture, whose 52.8 thousand workers accounted for 23 percent of total jobs in the state. As table 2.4 shows, wholesale and retail trade (36.7 thousand), services (23.4 thousand), state and local government (20.0 thousand) and miscellaneous "all other" employment (all self-employed



Civilian Employment, Montana  
1950, 1960 and 1968  
(thousands of workers)

	Change in Employment		
	1950	1960-1968	1959-1968
<b>Primary Employment</b>			
Agriculture	52.8	39.2	55.7
Lumber and wood products <sup>1</sup>	5.4	7.3	8.9
Food and kindred products manufacturing <sup>1</sup>	4.2	4.3	4.3
Primary metals manufacturing <sup>1</sup>	4.0	4.0*	4.4*
Other manufacturing <sup>1</sup>	4.4	5.0	6.4
Metal mining <sup>1</sup>	7.8	5.0*	2.9*
Other mining <sup>1</sup>	2.4	2.9	5.2
Railroads <sup>1</sup>	14.0	9.0	6.9
Federal Government <sup>1</sup>	8.5	9.9	12.3
<b>Total Primary Employment</b>	<b>103.5</b>	<b>86.6*</b>	<b>83.0*</b>
<b>Derivative Employment</b>			
Nonrail trans., comm., and utilities <sup>1</sup>	7.9	10.0	10.7
Contract construction <sup>1</sup>	10.5	11.0	11.5
Moderate and retail trade <sup>1</sup>	36.7	40.5	45.5
Services <sup>1, 2</sup>	23.4	30.0	38.1
State and local government <sup>1</sup>	20.0	28.6	41.0
All other employment <sup>3</sup>	26.7	30.2	24.6
<b>Total Derivative Employment</b>	<b>125.2</b>	<b>150.3</b>	<b>171.4</b>
<b>TOTAL EMPLOYMENT</b>	<b>228.5</b>	<b>236.9*</b>	<b>254.4*</b>
		+ 8.4*	+ 17.5*
		+ 21.1	+ 25.9*

Source: Payroll employment from Montana Employment Security Commission; Agricultural employment and all other employment estimated by Montana Economic Study.

1. Payroll employment only.

2. Includes finance, insurance, and real estate.

3. All nonagricultural self-employed workers and household workers.

Adjusted to eliminate the effects of copper industry strikes on employment in metal mining and primary metals manufacturing in 1969-1960 and 1967-1968.





workers outside agriculture plus household workers) together accounted for nearly 107 thousand workers, or about 47 percent of total employment.

Montanans are often surprised to learn that mining, primary metals manufacturing (mostly smelting, refining, and wire and cable production), and lumber and wood products, which, aside from agriculture, are Montana's distinctive industries, account for a rather small share of total jobs in the state. In 1950, these three categories together provided only 17.2 thousand jobs, 7.5 percent of the total.

What are generally thought of as "basic" industries accounted for less than half of all jobs in 1950, and this share has fallen substantially since then.

The employment data in table 2.4 are divided into two classes: "primary employment" and "derivative employment." Primary employment includes jobs in industries that depend heavily on markets outside Montana. Most agricultural production, for example, is exported to the rest of the country and, for that matter, the world. Similarly, metal mining, smelting, and refining depend on national and world markets for copper, lead, aluminum, and zinc. Most lumber produced in Montana is exported.

Derivative employment is made up of jobs that involve production of goods and services sold primarily in domestic (or in-state) markets. Wholesale and retail trade, the service industries (including finance, insurance, and real estate, hotels and motels, restaurants, beauty shops and barber shops, service stations, lawyers and doctors, and a host of other categories), and state and local government are all activities that cater mostly to local needs.



For some industries, of course, the proper pigeonhole is not so clear. For example, we have included both railroads and federal government employment in the "primary" category. Clearly much of the output of workers in both of these categories is for Montana consumption. But in both cases Montana accounts for considerably more than its pro-rata share of total U.S. employment, and it appears that much of the product is for outside, rather than local, consumption. On the other hand, since Montana does not account for a disproportionate share of employment in nonrail transportation (trucking and airlines for the most part), that industry is included in derivative employment.

In the derivative category are included most jobs that depend on tourism--including hotels and motels, restaurants, and service stations. Insofar as the tourists involved are from out-of-state, the employment created by their expenditures should be included in primary employment. However, no data are available which would permit this separation. Available data do indicate that tourism has a smaller effect on employment in these industries than much public discussion would seem to indicate. (See the chapter "The Trade, Service, and Finance Industries" in Part II of the Report of the Montana Economic Study.)

The theory behind the distinction between primary and derivative jobs is that primary employment is the strategic factor controlling the growth of total employment. The existence of local markets that provide the basis for derivative employment depends, ultimately, on primary employment. For example, when copper mining began in the state, in the 1880s, the growth of Butte and Anaconda was phenomenal. The driving force was employment in mining and processing of ore for



export, but much of the growth in total employment represented, not mining, but trade and service employment to serve the local population. Similarly, the rapid growth of logging and lumber operations in western Montana was the main driving force behind the growth of employment in and around Missoula during the 1950s and 1960s, but the resulting increase in jobs was much greater than the growth of employment in logging camps and lumber mills alone.

An increase in primary employment, then, causes an increase in derivative employment. Insofar as the state or its subdivisions undertake to influence the course of total employment, their strategic lever is primary employment. And although the classifications adopted here are imperfect in many respects, they are nonetheless very useful, and the following analysis leans heavily on the distinction.

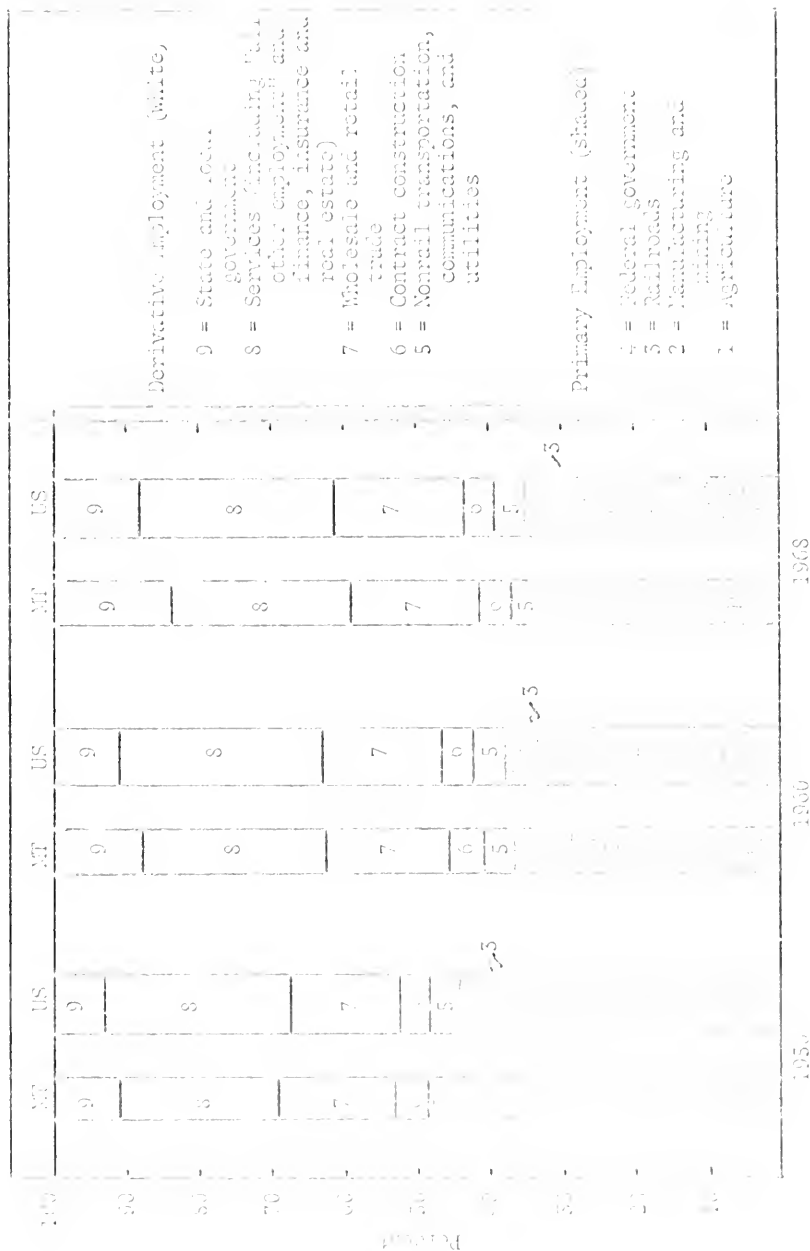
There is, however, an important complicating factor. The relationship between primary and derivative employment has been changing substantially, both in Montana and across the nation.

Figure 2.2 shows, for both Montana and the United States, the percentage allocation of total employment between primary industries (shown by the shaded portions of the bars) and derivative industries (shown by the white portions) for the years 1950, 1960, and 1963. In 1950, primary employment accounted for about 45 percent of total jobs in Montana and 44 percent for the U.S. as a whole. By 1960, the percentages had fallen to about 37 percent for Montana, and about 38 percent for the United States. By 1963, primary employment accounted for only about 35 percent of the total for the United States, and 33 percent for Montana. Employment was shifting away from primary industries to derivative industries.



Figure 2.2

Distribution of Employment by Industry  
Montana and United States  
1950, 1960, and 1963



Sources: Montana Employment Security Commission and Montana Economic Study.





This shift reflects one of the most important features of U.S. economic development since World War II. For the most part, the industries we have classified as derivative produce services, rather than goods. The services industries have been much less influenced by technological change and rising productivity than have the goods-producing industries. Output per man-hour has risen dramatically in manufacturing and agriculture, and substantially in mining. In the service industries, productivity increases (which are extremely hard to measure) have been much less dramatic. In fact, any change seems to have been all but imperceptible in many cases, including education and hospital care. Economic expansion has been driven by rising productivity in the goods-producing sectors, which has resulted in a major shift in the pattern of employment toward the service industries.

The reason may be seen by considering an example. Suppose that, in 1950, half the labor force had been employed producing goods such as food, automobiles, houses, and home appliances, and that the rest had been employed producing services, such as retail distribution, lodging, medical care, and education. If between 1950 and 1960 productivity per man-year had doubled in the goods-producing industries, but had not increased at all in the service industries, and total employment had not changed, the economy could have produced twice as much goods in 1960 as in 1950, along with the same amount of services.

But increased productivity in the goods industries implies that real income increases. It is unlikely that all of the increased income would be used to buy goods. Instead, part would be used to



by these services. The economy's ability to supply goods could increase faster than demand for them. The demand for services, on the other hand, would increase faster than supply. As a result, the price of goods would fall relative to the price of services, just as the cost of producing goods would fall relative to the cost of producing services. Labor would be shifted from the production of goods to the production of services, so that the proportion of the labor force employed in the service industries could rise.

Allowing for oversimplification, that is not a bad description of what has happened in postwar America. Productivity has increased most in the goods-producing sectors. Prices of services have risen much faster than those of goods, and employment has shifted away from goods into services.

For our present purposes, the most important implication of this change is that the share of derivative employment in total employment has risen because derivative employment is heavily concentrated in services. The trend is expected to continue.

#### 1950-1960: Slow Primary Employment Growth

As was noted earlier, the 8.4 percent increase in Montana's employment between 1950 and 1960 was not nearly great enough to absorb the "natural" increase in the state's labor force. The main reason for the slow growth of total employment was a large decline in primary employment. Table 2.5 shows that, ironically, total primary employment fell 2.5 percent during the decade 1950-1960. This reflected the general shift away from extractive and manufacturing industries and toward the service industries.



Table 2.5  
 Percentage Change in Civilian Employment  
 Montana and United States, 1950-1960

	Montana	U.S. <sup>4</sup>
Primary Employment		
Agriculture	+25.8	+21.1
Lumber and wood products manufacturing <sup>1</sup>	+35.2	+22.4
Food and kindred products manufacturing <sup>1</sup>	+ 2.4	+ 1.4
Primary metals manufacturing <sup>1</sup>	---	+ 1.3
Other manufacturing <sup>1</sup>	+13.6	+15.5
Metal mining <sup>1</sup>	+35.9	+ 4.1
Other mining <sup>1</sup>	+20.8	+23.1
Railroads <sup>1</sup>	+35.7	+36.4
Federal government <sup>1</sup>	+19.3	+15.5
Total Primary Employment	+16.2	+ 2.5
Derivative Employment		
Nonrail transportation, communication, and util. <sup>1</sup>	+26.6	+17.5
Contract construction <sup>1</sup>	+ 1.8	+22.7
Wholesale and retail trade <sup>1</sup>	+10.4	+20.8
Services <sup>1,2</sup>	+28.2	+37.6
State and local government <sup>1</sup>	+43.0	+47.7
All other employment <sup>3</sup>	+13.1	+11.5
Total Derivative Employment	+20.0	+25.1
TOTAL EMPLOYMENT	+ 3.1	+12.9

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Sources: United States Department of Labor, Bureau of Labor Statistics; Montana Employment Security Commission; and Montana Economic Study.

1. Payroll employment only.
2. Includes finance, insurance, and real estate.
3. All nonagricultural self-employed workers and household workers.
4. Excludes Alaska and Hawaii.



In Montana primary employment fell much more rapidly by 16.2 percent, or 16.7 thousand workers. As a result, the state's share of total primary employment across the country fell from 0.38 percent in 1950 to 0.33 percent in 1960.

Furthermore, because of this large decline in the state's primary jobs, derivative employment rose less rapidly in Montana than it did nationally. The 25.1 thousand increase in derivative employment in the state between 1950 and 1960 amounted to 20 percent, compared with a national increase of slightly over 25 percent. The state's share of total derivative employment fell from 0.37 percent of the national total in 1950 to 0.35 percent in 1960.

However, derivative employment did not fall as much, relative to the national total, as primary employment. This reflects the fact, mentioned earlier, that the shift toward derivative employment was more rapid in Montana than it was nationally. This phenomenon, which continued during 1960-1963, will be discussed further later in this chapter.

The Primary Job Gap. It was estimated earlier that total employment in the state would have had to grow by 26.5 thousand, or 13.1 thousand more than it did between 1950 and 1960, to have fully absorbed the "natural" growth of the labor force. Assuming that the ratio of total employment to primary employment in 1960 (2.74:1) would have been the same whatever the rate of growth of primary employment, an increase in total employment of 13.1 thousand would have required an additional 6.6 thousand jobs in primary industries. That is, instead of declining by 16.7 thousand, total primary employment would have had to fall by no





more than 10.1 thousand (about 10 percent) over the decade for Montana to have held onto the "natural" increase in its labor force.

#### 1960-1968: More of the Same

Between 1960 and 1968, the U.S. labor force increased enormously. The main reason was the influx of young people born during the postwar baby boom. The accelerated growth of jobseekers began at a time when unemployment was already uncomfortably high. Fortunately, beginning in about 1962, national fiscal and monetary policies began to generate a healthy increase in total demand for goods and services. The rapidly growing national work force was absorbed and unemployment was reduced. Between 1960 and 1968, total employment in the U.S. rose by 15 percent, or at a compound average annual rate of growth of 1.8 percent. Between 1950 and 1960, the average annual growth rate had been only 1.2 percent.

Montana's population in the labor force age group also tended to increase more rapidly, and employment opportunities, even though they grew more than twice as fast as they had in the 1950s, again failed to keep pace with "natural" labor force growth. Between 1960 and 1968, Montana's total employment rose by 17.5 thousand, or 7.4 percent. The compound annual growth rate was 0.9 percent per year, which was only about three-fifths as fast as the "natural" rate of growth of the state's labor force. As in 1950-1960, the main explanation for this sluggishness was a further decline in the state's share of total primary employment.

Table 2.6 shows that primary jobs in Montana fell another 1.2 percent (from 66.6 thousand to 65.0 thousand) between 1960 and 1968. Nationally, total employment in primary industries fell 15.5 percent,



APPENDIX 2.6

# Percentage Change in Civilian Employment Montana and United States, 1960-1968

	Montana	U.S. <sup>1</sup>
Primary Employment		
Agriculture	+14.0	+30.1
Lumber and wood products manufacturing <sup>1</sup>	+21.9	+ 4.0
Food and kindred products manufacturing <sup>1</sup>	---	+ 0.6
Primary metals manufacturing <sup>1</sup>	+10.0	+ 5.7
Other manufacturing <sup>1</sup>	+28.0	+22.1
Metal mining <sup>1</sup>	+42.0	+10.6
Other mining <sup>1</sup>	+10.3	+12.5
Railroads <sup>1</sup>	+23.3	+25.1
Federal government <sup>1</sup>	+24.2	+20.6
Total Primary Employment	+ 4.2	+ 5.6
Derivative Employment		
Nonrail transportation, communication, and util. <sup>1</sup>	+ 7.0	+18.1
Contract construction <sup>1</sup>	+ 4.5	+13.0
Wholesale and retail trade <sup>1</sup>	+12.3	+23.9
Services <sup>1,2</sup>	+27.0	+37.3
State and local government <sup>1</sup>	+43.4	+55.6
All other employment <sup>3</sup>	+18.5	+20.0
Total Derivative Employment	+11.0	+20.8
TOTAL EMPLOYMENT	+ 7.4	+15.1

Sources: United States Department of Labor, Bureau of Labor Statistics; Montana Employment Security Commission; and Montana Economic Study.

1. Payroll employment only.
2. Includes finance, insurance, and real estate.
3. All nonagricultural self-employed workers and household workers.
4. Includes Alaska and Hawaii.



and Montana's share of the nation's jobs in primary industries dropped further, from 0.35 percent in 1960 to 0.30 in 1968.

Derivative employment, which increased nearly 21 percent across the U.S., rose only 11 percent in Montana, and the state's share of the U.S. total fell from 0.35 percent in 1960 to 0.33 percent in 1968.

The decline in Montana's share of primary employment was again more severe than the decline in its share of derivative employment. Looked at another way, the ratio of derivative to primary jobs in Montana continued to increase relative to the national ratio. For the state, primary employment fell from about 37 percent of total employment in 1960 to about 33 percent in 1968. Nationally, it fell from about 38 percent in 1960 to about 35 percent in 1968.

Unemployment fell substantially in the United States during these eight years, as a result of both policies aimed at that goal and, after 1965, of inflationary government financial policies associated largely with the Vietnam War. The national unemployment rate dropped from an average of 5.5 percent in 1960 to an average of only 3.6 percent in 1968.

In Montana, the decline in unemployment was also substantial--from 6.7 percent of the work force in 1960 to 4.7 percent in 1968. But the state unemployment rate remained more than one percentage point higher than the national rate.

The Growing Primary Job Gap. Our calculations, presented earlier, indicate that, despite the more rapid rise in employment, Montana's job gap was greater during 1960-1968 than it had been during the 1950s. For Montana's economy to have absorbed the entire "natural" growth of



the labor force between 1960 and 1968, while bringing the state unemployment rate down to the national rate in 1968 (3.6 percent), would have required that employment rise by 37.8 thousand over the 8 years, or 20.3 thousand more than the actual growth.

Given the ratio of total employment to primary employment in 1968, this implies that 6.6 thousand more primary jobs would have been required by 1968 to have closed the 1960-1968 job gap. That is, instead of falling by 4.2 thousand, primary employment would have had to rise by 2.4 thousand over the 8 years. This 6.6 thousand difference amounts to about 825 primary jobs a year. During 1950-1960, the corresponding deficiency in primary jobs averaged about 650 a year.

It appears, then, that even though the annual rate of increase in Montana's employment more than doubled during 1960-1968, the employment situation deteriorated relative to the growth of the labor force. The state's unemployment rate remained well above the nation's, and, compared with the 1950s, a larger number of persons left the state each year in search of employment opportunities.

#### WHY MONTANA'S EMPLOYMENT LAGGED

The slow growth of total employment in Montana between 1950 and 1968 was mainly a reflection of the decline in the state's share of U.S. total primary employment. This share declined from about 0.59 percent in 1950 to about 0.40 percent in 1968, or by





nearly one-fourth. As has already been explained, total derivative employment actually grew faster than might have been expected, given the size of the decline in primary jobs. The state's share of total U.S. derivative employment fell only from about 0.37 percent in 1950 to about 0.33 percent in 1968. This reflected the fact that the ratio of derivative employment to primary employment rose faster in Montana than it did nationally.

#### Primary Employment: Eggs in the Wrong Basket

Between 1950 and 1968 Montana's primary employment fell by 20.3 thousand. Nationally, employment in these industries rose 3 percent during the same period. Had Montana's primary employment risen at the national rate, more than 3 thousand new jobs would have been created in primary industries between 1950 and 1968. That would have meant approximately 24 thousand more primary jobs in 1968 than actually existed in that year. Derivative employment would then have risen by somewhere between 40 and 50 thousand jobs, and the total increase--some 65-75 thousand jobs--would have been more than was needed to absorb the "natural" increase in the state's labor force while holding Montana unemployment to a rate no higher than the national average.

Overall, the decline in Montana's total primary employment did not reflect an inability of the state's primary industries to keep pace with their national counterparts. Actually, Montana improved its competitive position in most primary industries. But these improvements were not sufficient to offset the implications of the fact that Montana's primary jobs were concentrated mostly in industries that, throughout the period, were experiencing declining employment



across the country--partly because of rapidly increasing productivity per man-hour, and partly because of slow growth in demand for goods produced by these industries.

Table 2.7 shows how primary employment was distributed among industries in Montana and the U.S. in 1950. Over half of Montana's primary employment was accounted for by agriculture, compared with only about 23 percent for the U.S. as a whole. Railroads accounted for nearly 14 percent of the primary jobs in Montana, compared with only about 5 percent nationally. Montana also showed a substantially higher than average concentration of employment in metal mining and lumber and wood products manufacturing.

In all of these primary industries in which Montana specializes, employment declined nationally between 1950 and 1968. And in the two that were most important to Montana in 1950--agriculture and railroads--the national decline in employment was about 50 percent over the 18 years 1950-1968.

Nationally, the only primary industry categories that provided more jobs in 1968 than in 1950 were "other manufacturing" and federal government. Both showed gains of a little over 40 percent during the 18 years.

Montana had a slightly above-average share of federal government jobs in 1950. But only about 4 percent of its primary employment in 1950 was accounted for by "other manufacturing"--all manufacturing other than lumber and wood products, food products, and primary metals. For the nation, "other manufacturing," which includes most of the nation's jobs in manufacturing, provided over 40 percent of



TABLE 2.7

Percentage Distribution of Civilian Primary Employment Among Industries  
Montana and United States, 1950

	<u>Montana</u>	<u>U.S.</u> <sup>1</sup>
Agriculture	51.1	27.8
Lumber and wood products manufacturing	5.2	3.0
Food and kindred products manufacturing	4.1	6.6
Primary metals manufacturing	3.9	4.6
Other manufacturing	4.3	42.3
Metal mining	7.6	0.4
Other mining	2.3	3.0
Railroads	13.6	5.2
Federal government	<u>8.0</u>	<u>7.1</u>
	100.0	100.0

---

Sources: U.S. Department of Labor, Bureau of Labor Statistics;  
U.S. Department of Commerce, Bureau of the Census; Montana  
Employment Security Commission; and Montana Economic Study.

Note: Details may not add to total because of rounding.

1. Excludes Alaska and Hawaii.



total primary employment in 1950. Thus the industry grouping that accounted for most of the growth in the nation's primary employment is one in which Montana had (and still has) a very small share of the action. The lackluster performance of the state's primary employment can be traced to specialization in industries where employment has been falling.

Montana's primary employment actually held up better than might have been expected, once this fact is taken into account. The first two columns of table 2.8 compare state and national percentage changes in primary employment by industry between 1950 and 1968. (The national employment figures for 1968 include Alaska and Hawaii, whereas the 1950 figures do not. This imparts a small upward bias to the changes in employment for the U.S. shown in table 2.8.)

In all but two industry classifications--metal mining, and "other manufacturing"--Montana employment fell less, or grew more, than the national average. The third and fourth columns compare the actual change in Montana's employment for each industry with the changes that would have occurred had the state's share of the national total for that industry remained unchanged between 1950 and 1968. The last column, which indicates differences between columns 3 and 4, measures the effect on Montana employment that was due to a change in the state's share of the national total. For example, jobs in Montana agriculture fell 19.1 thousand, over the 18 years, a 36 percent decline. Nationally, agricultural employment fell 47 percent, so Montana's share of the national total was rising. Had the state's share remained the same--that is, had farm employment in the state





TABLE 2.8

Percentage Change in Civilian Primary Employment in Montana and United States  
and  
Montana's Actual and Hypothetical Change in Primary Employment  
1950-1968

	Percent Change		Montana Change (000 of Jobs)		Competitive Gain (+) or Loss (-)
	Montana	U.S. <sup>a</sup>	Actual	Constant Share	
Agriculture	-36	-47	-19.1	-24.8	+5.7
Lumber and wood products manufacturing	+65	-26	+ 3.5	- 1.4	+4.9
Food and kindred products manufacturing	+ 2	- 1	+ 0.1	---	+0.1
Primary metals manufacturing	+10 <sup>b</sup>	+ 4	+ 0.4 <sup>b</sup>	+ 0.2	+0.2
Other manufacturing	+45	+41	+ 2.0	+ 1.3	+0.7
Metal mining	-63 <sup>b</sup>	-13	- 4.9 <sup>b</sup>	- 1.0	-5.9
Other mining	+33	-33	+ 0.8	- 0.8	+1.6
Railroads	-51	-52	- 7.1	- 7.3	+0.2
Federal government	+48	+42	+ 4.0	+ 3.5	+0.5
Total Primary Employment	-20 <sup>b</sup>	+ 4	-20.3 <sup>b</sup>	-30.3	+10.0

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Sources: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Bureau of the Census; Montana Employment Security Commission; and Montana Economic Study.

Note: Details may not add to total because of rounding.

<sup>a</sup>Excludes Alaska and Hawaii in 1950 and includes Alaska and Hawaii in 1968.

<sup>b</sup>Adjusted to eliminate the effects of the 1959-1960 and 1967-1968 copper strikes.



fallen at the 47 percent national rate--the decline between 1950 and 1968 would have been 24.8 thousand. The difference between the actual decline and the constant share decline was 5.7 thousand. This represented a "competitive gain" for Montana: farm jobs fell by 5.7 thousand less than they would have if Montana had not increased its share of total agricultural employment between 1950 and 1968.

Montana made substantial competitive gains in two other industries. Employment in lumber and wood products manufacturing would have fallen 1.4 thousand had the state's experience paralleled that of the nation. Actually it rose 3.5 thousand, and the competitive gain amounted to 4.9 thousand jobs. In "other mining," which includes oil extraction, employment rose 800. It would have fallen by 800 had the state's experience been the same as the nation's. The competitive gain in this case was 1.6 thousand jobs. The competitive gains also included 500 federal government jobs.

The only important competitive loss was in metal mining, where employment fell 4.9 thousand over the 18 years. This was a drop 3.9 thousand larger than would have occurred had Montana's share of national employment in metal mining not fallen.

Altogether, as table 2.8 shows, the 20.5 thousand decline in primary employment in Montana between 1950 and 1968 was 10.0 percent smaller than it would have been had the state's share of the national total in each industry remained the same. Thus the overall decline in primary employment resulted from the concentration of Montana jobs in industries where employment was declining, and would have been much greater had not all but two industries improved their competitive positions.



Most of the weakness in primary employment traces to three industries--agriculture, metal mining, and railroads. Altogether, in Montana jobs in these industries declined 31.1 thousand between 1950 and 1968. In all three cases, changing technology played a big role. Detailed discussions of the course of employment in each of these industries can be found in Part II of the Montana Economic Study Report. But it is worthwhile noting here some of the broad forces at work.

The mechanization of agriculture and improved technology made it possible for agricultural output to rise while employment on farms and ranches was falling. At the same time, demand for agricultural output rose much less rapidly than demand for goods and services generally.

In copper mining, the 1956 shift from underground to open-pit operations at Butte, which meant machines took over much of the work done by men, spelled a drastic reduction of employment on the Butte hill even though copper output increased substantially. There is reason to believe that employment cutbacks in copper mining, which continued through 1968, have ended, at least for a time. Recent increases in copper prices have stimulated more production, and the chances are good that new open-pit mines will be established elsewhere in the state during the 1970s.

Railroading has changed drastically since 1950. Most obvious is the near-disappearance of passenger trains. For freight, the rapid growth of trucking has meant some competitive loss for the railroads. Still, the amount of freight shipped by rail remains



enormous. The decline in railroad employment has been due more to technological change--automated freight yards and the change from steam to diesel-power are examples--than to a loss of business to other modes of transport.

Montana's employment in lumber and wood products manufacturing increased substantially, even though jobs in this industry were declining nationally. The increase in Montana was brought about mostly because of the state's large timber reserves. As demand for lumber grew during the postwar years, declining timber supplies in other parts of the country, plus improved technology and higher prices, made it feasible to harvest Montana's steeper slopes and to use its smaller trees and previously unacceptable species.

It was, then, Montana's fate to depend mainly on primary industries whose employment requirements, nationally, were plummeting during the 1950s and 1960s. Even though Montana held, or more than held, its own share of national employment in most of them, and actually posted significant gains in lumber and wood products, the broad trends were so powerful that the state's competitive gains could only ameliorate the slide in primary employment.

#### Derivative Employment

Derivative employment is aimed at producing goods and services--mainly the latter--for local markets. In 1950 the most important categories of derivative employment were payroll jobs in wholesale and retail trade and the service industries and "all other" employment, which consists of household workers and self-employed workers outside agriculture.





By 1968, state and local government employment had become more important than any other category except payroll employment in whole-sale and retail trade. Over the 18 years, 1950-1968, Montana state and local government payrolls increased far faster, both in number of workers and in percentages, than any other category of either primary or derivative employment.

As table 2.4 shows, total derivative employment rose 46.2 thousand, or 37 percent, between 1950 and 1968. State and local government jobs alone rose 21.0 thousand, over 100 percent. Payroll employment in the service industries also rose rapidly--by 14.7 thousand workers, an increase of 63 percent.

The rapid growth of jobs in state and local government and the service industries reflected nationwide trends, as did the increases in most other categories of derivative employment. Both nationally and in Montana only the "all other" category declined.

Overall, derivative employment rose less rapidly in Montana than nationally. The basic reason was the decline of primary employment in the state. As was explained above, derivative employment depends on population, and both of these depend, ultimately, on primary employment. Since Montana's share of primary employment fell from 1950 to 1968, it was to be expected that its share of derivative employment would also fall. But because the relative shift away from primary employment and toward derivative employment proceeded faster in Montana than it did nationally, the state's share of the national total of jobs in this category fell less than might have been expected.



Relation to Total Employment. Montana's greater relative shift to derivative employment is brought out in table 2.9. As the first two columns indicate, in 1950 derivative employment per 1,000 total employment was slightly lower in Montana than it was across the nation. But between 1950 and 1968 the number of workers in derivative industries in Montana per 1,000 total employment increased from 548 to 674, while nationally the increase was considerably smaller--from 559 to 653. Thus, by 1968 the ratio of derivative to total jobs in Montana surpassed the national average.

That this was due mainly to the rapid growth of state and local government jobs can be seen in table 2.9. In 1950, there were 88 such jobs for every 1,000 total employment. By 1968, the figure had risen 83 percent to 161 state and local government employees for every 1,000 total workers. The U.S. average was considerably lower in both years, and the increase--from 67 in 1950 to 119 in 1968--was only 78 percent.

Derivative employment outside the state and local government category also grew in relation to total Montana employment, but less dramatically. And the number of workers in this category per 1,000 jobs in Montana was below the national average in both 1950 and 1968, though by 1968 the difference had become considerably smaller than it had been in 1950.

Relation to Population. Since derivative industries serve primarily local markets, one would expect to find a close connection between derivative employment and total population of the area. Table 2.10 shows derivative jobs per 1,000 population for Montana and the United States in 1950 and 1968.



TABLE 2.9

Derivative Employment Per 1,000 Total Civilian Employment  
Montana and United States, 1950 and 1968

	1950		1968	
	Montana <sup>1</sup>	U.S. <sup>2</sup>	Montana	U.S. <sup>3</sup>
Nonrail transportation, communication and utilities	35	43	42	46
Contract construction	46	38	45	41
Wholesale and retail trade Services <sup>1</sup>	161	153	179	178
	102	119	150	174
State and local government	88	67	161	119
All other employment	<u>117</u>	<u>138</u>	<u>97</u>	<u>94</u>
Total	548	559	674	653
Total excluding state and local government	461	492	513	534

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Sources: U.S. Department of Labor, Bureau of Labor Statistics; Montana Employment Security Commission; and Montana Economic Study.

Note: Totals may not add due to rounding.

1. Includes finance, insurance, and real estate.
2. Excludes Alaska and Hawaii.
3. Includes Alaska and Hawaii.



TABLE 2.10

Derivative Employment Per 1,000 Resident Population  
Montana and United States, 1950 and 1968

	1950		1968	
	Montana	U.S. <sup>2</sup>	Montana	U.S. <sup>3</sup>
Nonrail transportation, communication, and utilities	13	17	15	18
Contract construction	18	15	17	16
Wholesale and retail trade Services <sup>1</sup>	62	62	65	71
State and local government	39	48	55	69
	34	27	59	47
All other employment	45	56	35	38
Total	211	225	246	260
Total excluding state and local government	177	198	187	213

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Sources: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Bureau of the Census; Montana Employment Security Commission; and Montana Economic Study.

1. Includes finance, insurance, and real estate.
2. Excludes Alaska and Hawaii.
3. Includes Alaska and Hawaii.





Derivative employment was lower relative to total population in Montana than it was nationally in both years. The difference did not change much between 1950 and 1968. For all derivative employment other than in state and local government, the Montana figure of 177 per 1,000 population in 1950 was 11 percent below the national average. By 1968, the figure for Montana had risen to 187, about 12 percent below the national average of 213.

State and local government employment per 1,000 population was 34 for Montana in 1950, about 26 percent higher than the national average of 27. By 1968, the number of state and local government workers per 1,000 population had risen to 59 in Montana, and to 47 for the U.S. as a whole. Montana's ratio remained about 26 percent above the national average.

Thus, although derivative employment grew faster relative to total employment in Montana than in the nation, it grew about the same relative to population. The inference to be drawn is that the greater shift in total employment toward derivative industries in Montana reflected mainly the slower growth of total employment relative to total population in Montana.

High Government Employment. The fact remains, however, that both in 1950 and in 1968, state and local government employment was more than one-fourth higher relative to population in Montana than it was nationally. As table 2.11 indicates, in 1968 the number of state and local government employees per 1,000 population was higher in Montana than in all but 11 of the other 49 states.



TABLE 2.11

State and Local Government Employees  
Per 1,000 Resident Population, 1967  
(By States Ranked from High to Low)

Rank	Employees Per 1,000 Population	Rank	Employees Per 1,000 Population
1	Wyoming	26	Maine
2	North Dakota	27	Hawaii
3	South Dakota	28	Florida
4	Colorado	29	Delaware
5	Kansas	30	Indiana
6	Nebraska	31	West Virginia
7	Alaska	32	Massachusetts
8	Washington	33	Illinois
9	Oregon	34	Maryland
10	Utah	35	Missouri
11	Nevada	36	Mississippi
12	MONTANA	37	Georgia
13	Idaho	38	Tennessee
14	New Mexico	39	Ohio
15	Wisconsin	40	Texas
16	New York	41	Rhode Island
17	Minnesota	42	Virginia
18	California	43	Arkansas
19	Iowa	44	Connecticut
20	Oklahoma	45	Alabama
21	Arizona	46	North Carolina
22	Michigan	47	Kentucky
23	Vermont	48	New Jersey
24	Louisiana	49	South Carolina
25	New Hampshire	50	Pennsylvania
			46.4
			46.3
			45.8
			44.7
			44.5
			43.2
			42.6
			42.5
			42.3
			42.0
			41.4
			41.0
			40.6
			40.5
			39.6
			39.6
			39.5
			39.5
			39.4
			39.1
			38.8
			38.1
			37.8
			36.7

Source: U.S. Department of Commerce, Bureau of the Census.

Note: Number of state and local government employees as of October, 1967.



We have examined factors that account for differences in state and local government employment across the nation, using 1967 data. There appear to be two main reasons for Montana's large government payrolls. The first, whose influence is very clear, is the unusually large enrollment in public schools and colleges relative to population. In Montana, school enrollments amounted to 27.2 percent of total population, twelfth highest in the nation. The second, whose influence is much less definite from the standpoint of statistical analysis, is the exceptionally large number of units of government in Montana relative to population. Montana had nearly 1.6 units of state and local government per 1,000 population, more than all but 4 other states. This is due mainly to the large number of school districts (713 in 1967). This finding is tenuous, however, and does not necessarily mean that consolidation of school districts and other units of government is called for. To some extent, the low population density in Montana requires smaller governmental units.

#### PATTERNS OF MIGRATION

Net out-migration from Montana averaged about 2,500 per year between 1950 and 1960. Between 1960 and 1968, according to Census Bureau estimates, the rate of net out-migration more than doubled, to about 5,700 per year. Although there is considerable uncertainty about year-to-year rates of migration, it appears that during most of the 1950s out-migration was moderate, and that most of the movement occurred during the last three years of the decade. This was the period when employment grew least rapidly.

For 1950-1960 the decennial censuses provide the basis for highly accurate estimates of the details of net migration. For



1960-1968 the data are much less satisfactory because 1968 was not a census year. The reader should therefore bear in mind that estimates pertaining to the latter period are fragile, and might well require revision when the 1970 Census data become available.

This discussion will focus on three characteristics of migrants--age, sex, and education. A later chapter, which deals with regional changes within the state, discusses an additional important dimension--heavy net out-migration from rural areas. Some urban centers actually experienced substantial net in-migration.

Table 2.12 shows net migration by five-year age groups for both sexes between 1950 and 1960. As the top half indicates, there was net out-migration--defined as an excess of persons moving out over persons moving in--in every age group. The lower half, which shows percentage rates of net out-migration, indicates that the rates were lowest for the age groups 30-34 and 0-9, and highest for the 20-24 year age group. Migration rates were also high for the 15-19 year age group, and for persons over 50. Most of the net out-migration of persons aged 65 and over represented movement of retired persons, particularly to the west coast and southwest. Migration in the 0-14 year age bracket represented mostly children of working parents who moved. So did part of the migration of persons aged 15-19 in 1960. But the remaining net out-migration, in age groups 20-64, which amounted to 14.1 thousand, represented mainly movements of persons in the labor force plus the nonworking wives of workers. Altogether, it appears that mobility was least for persons in the age groups 25-49 and 0-9. These age groups represent the families of workers who have, probably, the most to lose by moving. Growing family responsibilities and large debts might explain the relative stability of population in these groups.





TABLE 2.12

Net Migration by Age and Sex  
Montana, 1950-1960

Age in 1960	Total	Male	Female
<u>Net Number Migrating</u>			
0-4	-1073	- 542	- 531
5-9	- 674	- 239	- 435
10-14	-2135	-1068	-1067
15-19	-3606	-2275	-1331
20-24	-4806	-2839	-1967
25-29	-1106	- 580	- 526
30-34	- 101	- 53	- 48
35-39	-1066	- 709	- 357
40-44	-1336	- 707	- 629
45-49	-1071	- 589	- 491
50-54	-1741	- 835	- 906
55-59	-1495	- 556	- 939
60-64	-1342	- 512	- 830
65-69	-1654	- 823	- 831
70-74	-1241	- 665	- 576
75+	- 720	- 458	- 262
Total	-25115	-13417	-11698
<u>Net Percentage Migration Rates<sup>a</sup></u>			
0-4	- 1.3	- 1.5	-1.5
5-9	- 0.9	- 0.6	-1.1
10-14	- 3.1	- 3.1	-3.1
15-19	- 6.6	- 8.2	-5.0
20-24	-10.7	-12.6	-8.8
25-29	- 2.8	- 2.9	-2.6
30-34	- 0.2	- 0.2	-0.2
35-39	- 2.4	- 3.2	-1.7
40-44	- 3.0	- 3.1	-2.9
45-49	- 2.6	- 2.7	-2.5
50-54	- 5.0	- 4.5	-5.6
55-59	- 5.1	- 3.6	-6.7
60-64	- 5.5	- 4.1	-6.9
65-69	- 6.7	- 6.6	-6.9
70-75	- 5.8	- 5.9	-5.7
75+	- 3.1	- 3.9	-2.5
Total	- 3.6	- 3.8	-3.4

Source: U.S. Department of Agriculture, Economic Research Service.

<sup>a</sup>Percentages were calculated by dividing net migration by the 1950 surviving population (1950 population minus deaths).



Whatever might be the logic of this explanation, there appears to have been a substantial change in the pattern of out-migration during 1960-1968. Table 2.13 shows our estimates of migration for seven age groups for both 1950-1960 and 1960-1968. Technical restraints (the estimation of net migration is tricky when a noncensus year such as 1968 is involved) conditioned the choice of age groups shown.

In both periods, net out-migration occurred in all seven age groups. But during 1960-1968, the pattern of exodus shifted toward the age groups 21-44 and 5-15, and away from persons 45 and over. Three conclusions about the changing pattern of migration seem warranted. First, families with young children seem to have moved out in much larger numbers. Second, out-migration by persons over 45 but below retirement age seems to have diminished considerably. And third, net out-migration by persons who had reached age 65 dropped very substantially.

Given the inferior data on which the 1960-1968 migration data are based, it seems wiser not to make too much of the apparent change in migration patterns. One factor behind the greater net out-migration of younger members of the labor force during 1960-1968 was the closing of the Glasgow Air Force Base in mid-1968. In a state with a fairly low population, such a closure can substantially alter figures.

The slower net out-migration of persons over 65 during 1960-1968 appears to reflect an increasing attractiveness of northwestern Montana for retired people. The available data indicate that this region experienced fairly substantial net in-migration of persons over 65 during these eight years. Casual observation also suggests that there



TABLE 2.13

Net Migration, by Age  
Montana

1950-1960 and 1960-1968

Age in Terminal Year 1960	Total Net Migration 1950-1960	Percent of Total Net Migration 1950-1960	Age in Terminal Year 1968	Total Net Migration 1960-1968	Percent of Total Net Migration 1960-1968
0-4	-1073	4.26	0-4	- 1804	3.83
5-13	-2760	10.97	5-13	- 9715	20.65
14-17	- 206	0.82	14-17	- 2357	5.01
18-20	-4878	19.38	18-20	- 5456	11.60
21-44	-6986	27.76	21-44	-25025	48.94
45-64	-5649	22.45	45-64	- 3869	8.22
65 and over	-3615	14.36	65 and over	- 820	1.74
All ages	-25167	100.00		-47046	100.00

Source: Kenneth P. Johnson, Recent Migration Trends in Montana, Staff Study, Montana Economic Study (Missoula, Montana: Bureau of Business and Economic Research, University of Montana, June 1970).

Note: Total net migration differs slightly from that shown in table 2.12 due to different methods of estimation.



has been a growing movement of retirement-age persons from other states and from other parts of Montana into northwestern Montana, which offers many attractions for the outdoor-minded.

### The Changing Age-Structure of the Population

The age-structure of the population is an important economic variable. The larger the proportion in the working-age group, the higher is per capita income likely to be. And the smaller the proportion that is school-age, the lower will be per capita costs of education, which constitutes a large share of total state and local government spending.

The age-structure of the national population changes over time primarily because of variations in birth and death rates. Between 1950 and 1960, the proportion of the U.S. population in the working-age groups fell, and the proportion in school-age and retirement-age brackets rose. The increase in the proportion of school-age was particularly rapid, and reflected the post-World War II baby boom. The increased proportion in the retirement-age bracket was due partly to a decline in death rates among older people.

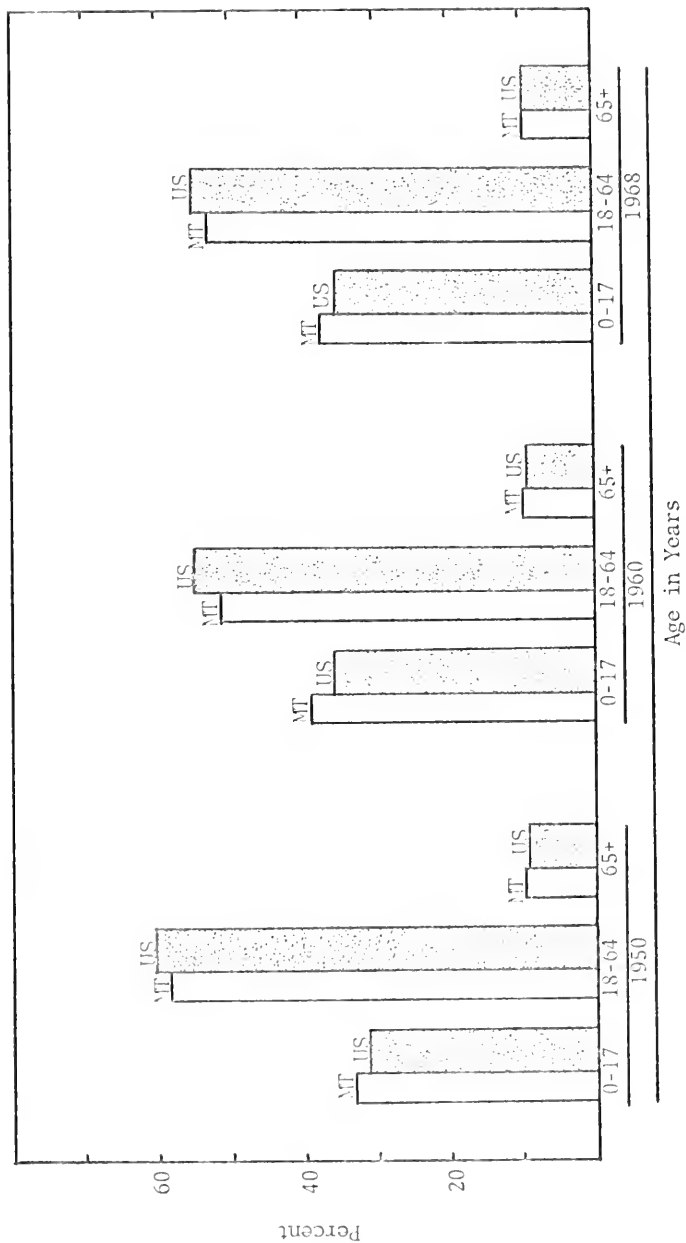
The result of these changes was a reduction in the proportion of the population made up of people in the working-age brackets. Figure 2.3 shows that, for the nation as a whole, the proportion of total population accounted for by persons between 18 and 65 dropped from 60.5 percent in 1950 to only 55.0 percent in 1960. The proportion aged 0-17 rose from 31.2 percent to 35.7 percent, and the proportion over 65 rose from 8.2 percent to 9.2 percent. Between 1960 and 1968, the working-age proportion remained 55.0 percent,





Figure 2.3

Age-Distribution of Resident Population  
 Montana and United States  
 1950, 1960, and 1968



Source: U.S. Department of Commerce, Bureau of the Census.



the school-age proportion dropped slightly from 35.7 percent to 35.4 percent, and the retirement-age proportion rose from 9.2 to 9.6 percent.

The age-structure of Montana's population behaved somewhat differently. As figure 2.3 shows, the state had a higher proportion in the school-age group, and a smaller proportion in the working-age group, in all three years. The reduction in the proportion accounted for by the working-age group fell more rapidly in Montana than it did nationally during the 1950s. In 1950, 58.4 percent of Montana's total population was in the 18-64 age group, compared with 60.5 percent for the country as a whole. By 1960, the Montana proportion had fallen to only 51.7 percent, compared with the national figure of 55.0 percent. The school-age population's share in the state total, meanwhile, had risen from 32.9 percent (about one-twentieth higher than the corresponding figure for the nation) to 38.6 percent (about one-twelfth higher than the national average).

The greater shift away from working-age and toward school-age groups in Montana reflected the pattern of out-migration during the 1950s. As has been pointed out, young single persons and childless couples moved out more rapidly than any other age group, while there was little net migration of families with school-age children. The result was a rise in the financial requirements of the school system accompanied by a decline in the proportion of the population at work.

During the 1960s, the proportion of the population accounted for by children under 18 fell at a faster rate in Montana than it did nationally although, as figure 2.3 shows, it remained higher than



the national average. In 1968, this proportion was 37.7 percent, about one-sixteenth above the corresponding national figure of 35.4 percent.

In 1968 Montana's retirement-age population accounted for the same proportion of the total--9.6 percent--as the national average. In both 1950 and 1960, the proportion of retirement-age persons living in Montana had been slightly higher than the national average.

### Migration by Education Level

Montanans are concerned about the out-migration of young persons. In particular, it is widely felt that migration drains away a large portion of the state's best-educated young people. One of our staff studies estimates migration by age, sex, and level of educational attainment, using data from the 1950 and 1960 Censuses. The estimation procedure is complex, and the findings are subject to some error, but they are tolerably accurate.

The first part of table 2.14 shows estimated net geographic migration of persons aged five and over in 1950 for the period April 1, 1950 to April 1, 1960, classified by age, sex, and education level. In all but two cases (males under 35 with less than 9 years of school completed and females under 35 with some college education, but less than 4 years of college) there was net out-migration.

The second part of table 2.14 shows the percentage rates of net migration. For both males and females the rates were highest for persons with 16 years or more of education (the equivalent, in most cases, of at least a bachelor's degree). Most striking of all was the 34 percent out-migration rate for younger college male graduates.



TABLE 2.14

Net Geographic Migration by Age,<sup>a</sup> Sex,  
and Years of School Completed, Montana, 1950-1960

Number Migrating

	Total	Years of School Completed			
		<u>0-8</u>	<u>9-12</u>	<u>13-15</u>	<u>16+</u>
<u>Males 5 and over</u>	-14910	-1337	-7940	-1879	-3754
<u>Males 5-34</u>	- 7861	+2365	-6380	-1044	-2802
Males 35 and over	- 7049	-3702	-1560	- 835	- 952
<u>Females 5 and over</u>	-11165	-3742	-7066	+ 801	-1158
<u>Females 5-34</u>	- 6254	-1817	-4994	+1237	- 680
Females 35 and over	- 4911	-1925	-2072	- 436	- 478

Net Percentage Migration Rates<sup>b</sup>

	Total	Years of School Completed			
		<u>0-8</u>	<u>9-12</u>	<u>13-15</u>	<u>16+</u>
<u>All males</u>	-5.933	-1.122	- 8.265	- 8.919	-24.957
<u>Males 5-34 in 1950</u>	-5.833	+4.600	-10.244	- 8.130	-34.059
Males 35 and over in 1950	-6.049	-5.468	- 4.617	-10.151	-13.969
<u>All females</u>	-4.776	-4.260	- 6.625	+ 2.783	-11.016
<u>Females 5-34 in 1950</u>	-4.778	-4.324	- 7.273	+ 8.138	-13.584
Females 35 and over in 1950	-4.773	-4.202	- 5.454	- 3.211	- 8.681

Source: Kenneth P. Johnson, Recent Migration Trends in Montana, Staff Study, Montana Economic Study (Missoula, Montana: Bureau of Business and Economic Research, University of Montana, June 1970).

<sup>a</sup>Includes only persons aged five and over in 1950.

<sup>b</sup>Percent migration rates were calculated by dividing the net migration by the average number of people in a single cohort in 1950 and 1960.





The commonly held notion that the state is losing a substantial proportion of its best-educated young people is thus supported by the data. Until the 1970 Census results are in, it will not be possible to estimate migration rates for the 1960s, but it seems probable that net out-migration of college graduates remains high.

## CONCLUSION

Relative to the nation, employment and population have grown very slowly in Montana since World War II. The basic reason for the slow growth has been a comparative lack of employment opportunities, particularly since the late 1950s. With the exception of mining, this is not because the state's major primary (or export-oriented) industries have failed to hold their share of national totals. Rather, it is because Montana's employment is concentrated in industries that have been going downhill nationally. Derivative employment, which is mainly dependent on local markets, has held up quite well. For this reason total employment and population in Montana have actually risen more than might reasonably have been expected, given the rapid decline in primary employment.

Employment and population growth per se are not, in most minds, valid objectives of economic growth. But their sluggishness in Montana is symptomatic of a more basic problem--a relative lack of economic opportunity. The substantial net out-migration from the state, and the state's higher-than-average unemployment rate are both manifestations of this lack. The following chapter, which deals with trends in the income of Montana residents between 1950 and 1968, puts the focus on a more meaningful measure of economic welfare.



## CHAPTER 3

### Personal Income in Montana, 1950-1968

The most comprehensive single indicator of the status of Montana's economy is total personal income of the state's residents. This figure, estimated each year by the U.S. Department of Commerce, measures income of persons from all sources except capital gains on assets.

In 1950, Montana personal income was \$962 million, 0.425 percent of the \$226.2 billion national total. Personal income per capita--found by dividing total personal income by the state's population--was \$1,622 in 1950, 8 percent above the national average of \$1,496.

By 1960, Montana's total personal income had risen to \$1,383 million, but its share of the national total (\$396.6 billion, excluding Alaska and Hawaii, which were not included in the total for 1950) had fallen to 0.549 percent. And, although per capita personal income in Montana



rose 26 percent between 1950 and 1960, its level in the later year, \$2,037, was 8 percent below the national average of \$2,215.

The decline in Montana's share of total and per capita personal income continued during the 1960s. By 1968, total personal income for Montana had reached \$2,039 million, but the state's share of the United States total had fallen to 0.300 percent. Per capita personal income of Montanans was \$2,930 in 1968, 14 percent below the national average of \$3,421.

Over the 18 years, then, Montana's share of U.S. total personal income fell almost 30 percent, and the state's per capita personal income relative to the national average fell 20 percent. Among the 48 states that were members of the union in 1950, Montana ranked next to last in percent increase of per capita personal income between 1950 and 1968 (see table 3.1). The purpose of this chapter is to explore the factors behind this painfully slow growth.

#### PERSONAL INCOME: WHAT IT MEASURES

Personal income includes wage and salary income, "other labor income" (mainly fringe benefits of workers including employer contributions to private pension plans), income of proprietors of unincorporated business enterprises, property income (net rental income, interest, and dividends received by persons), and transfer payments (social security, welfare benefits, unemployment compensation, pensions of retired public employees, and certain other relatively minor payments for which no services are rendered currently). Individual "contributions for social insurance" which consist primarily of payroll



Percentage Change in Per Capita Personal Income  
Ranked From High to Low  
1950-1968

<u>Rank</u>	<u>State</u>	<u>Percentage Change</u>
1	Arkansas	181.5
2	Mississippi	175.6
3	Vermont	174.0
4	Kentucky	169.6
5	Georgia	169.0
6	South Carolina	166.5
7	Alabama	165.6
8	Tennessee	159.5
9	North Carolina	156.9
10	Oklahoma	152.0
11	Virginia	149.8
12	Florida	149.1
13	New Hampshire	146.3
14	Maine	138.3
15	Minnesota	137.0
16	Louisiana	135.2
17	Massachusetts	134.8
18	Maryland	133.6
19	West Virginia	131.9
20	South Dakota	131.4
21	Kansas	128.9
22	Wisconsin	127.7
23	Missouri	127.6
24	Arizona	127.4
25	Connecticut	127.0
26	Indiana	125.7
27	New Mexico	125.2
28	Colorado	124.6
29	Texas	124.5
30	Pennsylvania	121.9
31	New York	121.6
32	Rhode Island	121.0
33	Washington	120.3
34	Iowa	119.9
35	Illinois	118.1
36	Nebraska	117.2
37	Ohio	116.6
38	Michigan	116.2
39	North Dakota	116.2
40	New Jersey	115.6
41	California	114.3
42	Utah	113.1
43	Idaho	106.0
44	Oregon	101.8
45	Nevada	96.0
46	Wyoming	91.1
47	MONTANA	80.6
48	Delaware	78.1

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.





taxes for social security, are deducted in calculating total personal income.

Personal income does not include either capital gains or undistributed corporate profits, and it does not allow for most taxes paid by persons. The latter are, however, deducted to arrive at what is called "disposable personal income" (see figure 3.1).

#### Relation of Personal Income to National Income and Product

For some purposes, it would be preferable to measure economic activity by gross state product or net state product--measures of production that parallel the figures of gross and net national product. But such product accounts have been constructed for only a few large states. For Montana, personal income is the only aggregate measure available.

The relation of personal income to production for the nation as a whole is shown by figure 3.1. The first bar on the left shows gross national product for 1968. This is the value--\$866 billion--of all goods and services produced that year. It is not a measure of transactions, since it eliminates double counting of goods as they pass through the production process.

The "final" purchases of goods and services that enter into GNP (gross national product) are divided into three types: (1) investment in capital goods, including business spending for a new plant and equipment, business inventory accumulation, and private residential construction; (2) government spending on goods and services; and (3) private consumption spending, which includes spending by households for current consumption. These three items, taken together, measure



# THE NATIONAL INCOME AND PRODUCT ACCOUNTS - 1968

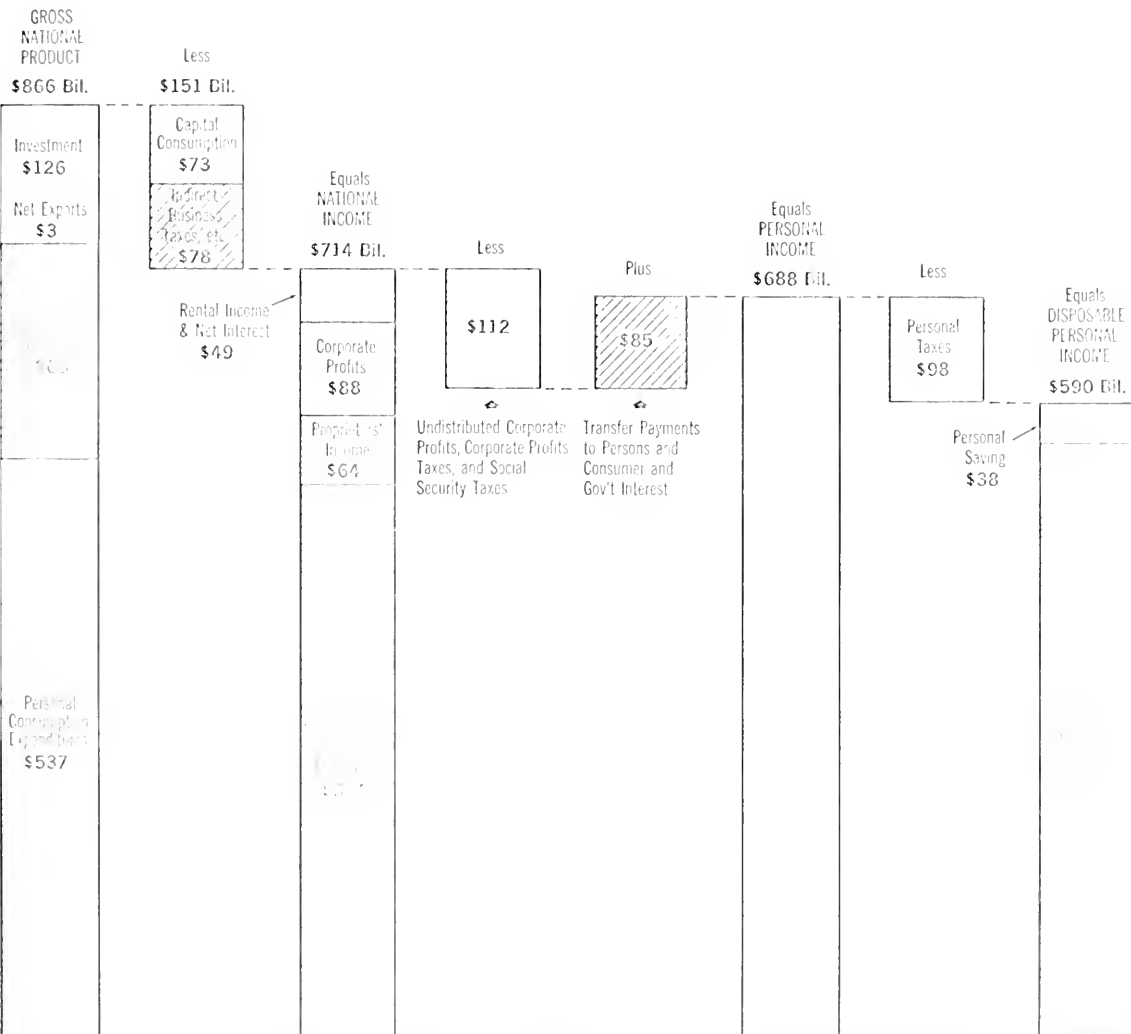
## Relation of the Four Major Measures of Production and Income Flows

**GROSS NATIONAL PRODUCT** is the market value of the output of goods and services produced by the Nation's economy

**NATIONAL INCOME** is the total earnings of labor and property from the production of goods and services

**PERSONAL INCOME** is the total income received by persons from all sources

**DISPOSABLE PERSONAL INCOME** is the income remaining to persons after payment of personal taxes



Source: Reproduced from United States Department of Commerce, Survey of Current Business, July, 1969.

Note: This figure is based on preliminary data.



total domestic expenditure on goods and services. Adding net exports (the excess of what America sells abroad over what it spends for imports) gives gross national product.

The amount of private net income earned from current production is called national income. It is equal to gross national product minus the sum of (a) capital consumption (depreciation of capital goods) and (b) the proceeds of sales-type taxes, which businesses turn over to the government. In 1968, national income amounted to \$714 billion, as figure 3.1 shows.

Most of national income is in turn included in personal income. As figure 3.1 indicates, \$514 billion of national income consists of "compensation of employees." This is the sum of wages and salaries (\$465 billion), "other labor income," (\$24.2 billion), and the portion of social security taxes that is paid by employers (\$24.4 billion). To the sum of all but the last of these items is added income of proprietors of unincorporated businesses, including farms and ranches (63.8) to arrive at what is called "participation income," or personal income earned directly from participation in current production. In 1968, total participation income was \$553 billion.

Another \$98 billion of personal income in 1968 consisted of property income--net rental income and dividend and interest income received by individuals. All of these receipts except interest earned on government securities represented distributions of net income from current production.

The remaining \$59 billion of total personal income, before the deduction of individual contributions to social insurance (mostly social security payroll taxes), consisted of transfer payments, which are not



part of income earned from current production. The most important of these were social security and welfare benefits.

Total personal income for 1968 shown in figure 3.1 is \$688 billion. The chart is taken from a U.S. Department of Commerce publication. Since it was published, the estimate of 1968 total personal income has been revised slightly, to \$684 billion.

As figure 3.1 indicates, personal tax payments (including mainly federal, state, and local individual income taxes and state and local property taxes) absorbed \$98 billion (14 percent) of total personal income in 1968. This left after-tax, or disposable, personal income of \$590 billion.

#### PERSONAL INCOME, 1929-1968: AN OVERVIEW

Montana's total personal income is that share of the national total (\$684 billion in 1968) received by residents of the state. Table 3.2 shows Montana's total personal income by components for 1968, along with the national totals for the same year. Wages and salaries comprised the most important single component for both Montana and the United States. "Other labor income"--fringe benefits of wage and salary workers--is really a part of the income of hired labor. The combined total of wages and salaries and other labor income was \$1,222 billion in Montana in 1968. Aggregate net income of farm proprietors and nonfarm proprietors was about \$180 million each. Property income was \$322 million, and transfer payments, \$202 million. After deduction of \$68 million in personal contributions for social insurance, total personal income came to \$2,039 million.





TABLE 3.2  
Total Personal Income  
Montana and United States  
1968

	Montana (millions)	United States (billions)	Montana as a Percentage of U.S.
Farms	\$ 35	\$ 2.9	1.21
Mining	43	4.9	.88
Contract construction	90	27.0	.33
Manufacturing	157	145.9	.11
Wholesale and retail trade	212	75.3	.28
Finance, insurance, and real estate	42	22.3	.19
Transportation, communication, and utilities	135	34.0	.40
Services	131	56.0	.23
Federal government, civilian	82	23.6	.35
Federal government, military	53	14.5	.37
State and local government	185	53.5	.35
Other industries	3	0.9	.33
Total wages and salaries	\$1,163	\$460.7	.25
Other labor income	54	24.2	.22
Farm proprietor's income	181	14.6	1.24
Nonfarm proprietor's income	180	49.2	.37
Total participation income	\$1,583	\$548.6	.29
Property income	322	98.4	.33
Transfer payments	202	59.2	.34
Less: personal contributions for social insurance	(68)	(22.6)	.30
TOTAL PERSONAL INCOME	\$2,039	\$683.7	.30

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Board of Study.

Note: Details may not add to total because of rounding.

United States data includes Alaska and Hawaii.



The top panel of figure 3.2 shows personal income\* for Montana and the United States from 1929 through 1968. The income figures are plotted against logarithmic vertical scales, so that equal slopes denote equal annual percentage rates of change.

Between 1929 and 1933, the bottom of the Great Depression, Montana's total personal income fell more rapidly than the national total, but from 1933 until the onset of World War II, it rose more rapidly. Mainly because of the large out-migration of workers during the war, Montana's total personal income rose much more slowly than the national total between 1943 and 1945. Between the war's end and 1950, however, Montana's total personal income increased very rapidly. It was after this that the slow growth that has characterized recent years set in.

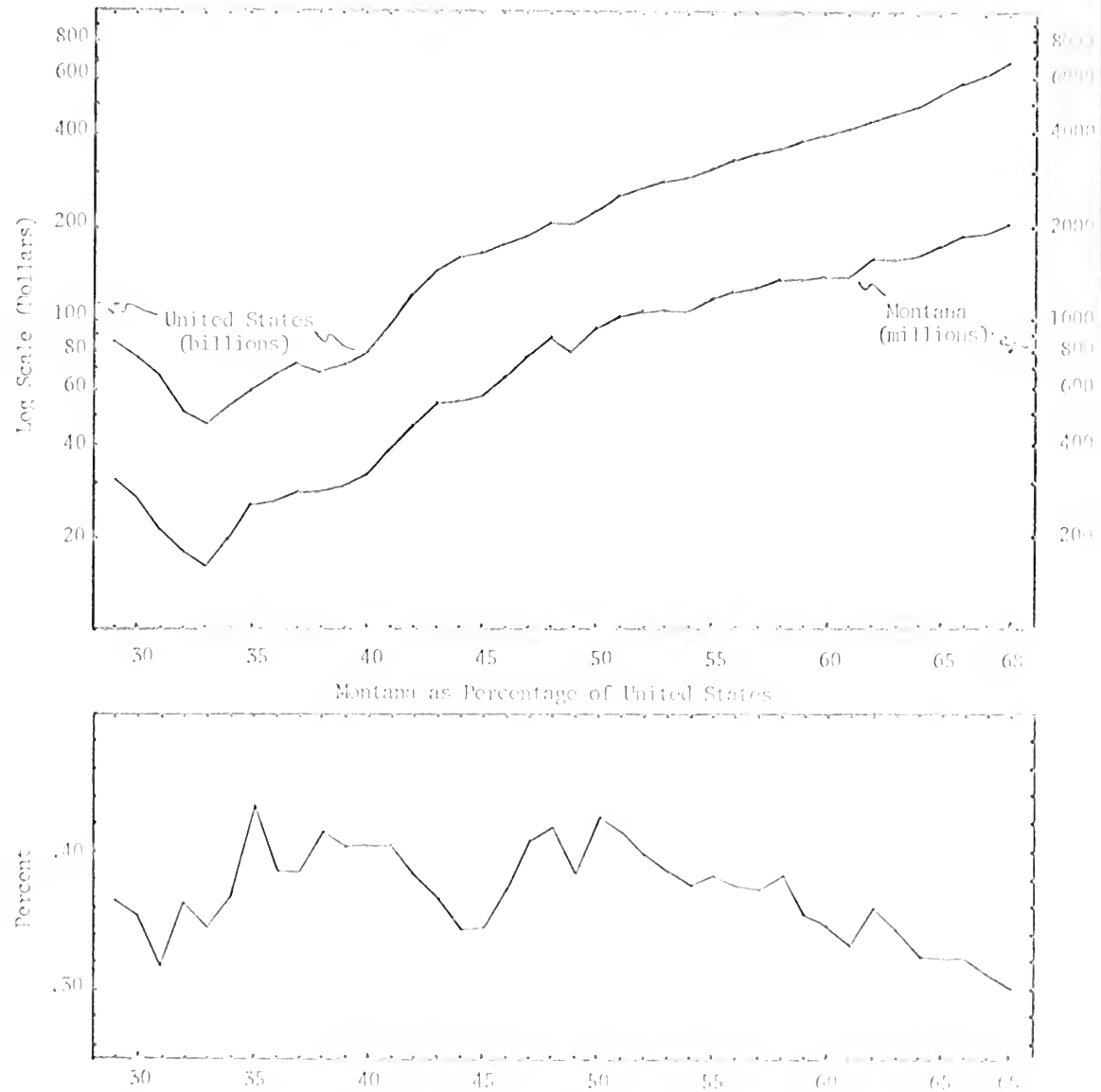
The bottom panel of figure 3.2 shows that the state's share of total U.S. personal income reached a higher level in 1950--0.425 percent--than it had in any other year since 1935. Then the downhill slide began, and by 1961 Montana's share had fallen below its previous (1944) low point. The decline has since continued, and by 1968, as pointed out earlier, total personal income of Montanans comprised only 0.300 percent of the national total.

This persistent downward trend was a manifestation of the same relative lack of economic opportunity that explains the decline in Montana's share of total U.S. employment between 1950 and 1968. The single most important factor behind this decline was the deterioration in the fortunes of agriculture. In 1950, Montana's farms and ranches were riding the crest of the wave of postwar prosperity, but subsequently



Figure 3.2

Personal Income  
Montana and United States  
1929-1968



Sources: U.S. Department of Commerce, Office of Economic Analysis; U.S. Department of Economic Studies.

Note: United States data in 1929. Annualized Personal Income 1929 to 1968.



prices of both crops and livestock tumbled, while the general price level was rising. Moreover, rapid increases in productivity (as more work was done by machine) led to a sharp decline in man-power requirements for agriculture.

Employment in most of Montana's other basic industries also declined. Altogether, as Chapter 2 pointed out, net out-migration amounted to more than 70 thousand between 1950 and 1968, mainly because people were leaving the state in search of better job opportunities elsewhere. Their earnings are registered in the figures for the states to which they moved.

As population fell, of course, total income of the state's residents could be expected to fall. However, Montana's per capita personal income also fell sharply. The top panel of figure 3.3 shows that for only one brief period--1946 through 1952--did Montana's per capita personal income exceed or equal the national average for more than a single year at a time. Since then it has fallen steadily.

The persistent decline in Montana's per capita personal income relative to the national average is convincing evidence that the state's residents have not shared fully in the nation's prosperity since World War II. Detailed analysis of this evidence will be presented below, but the data will be made more meaningful by first eliminating the influence of inflation.

#### CONVERSION TO DOLLARS OF CONSTANT PURCHASING POWER

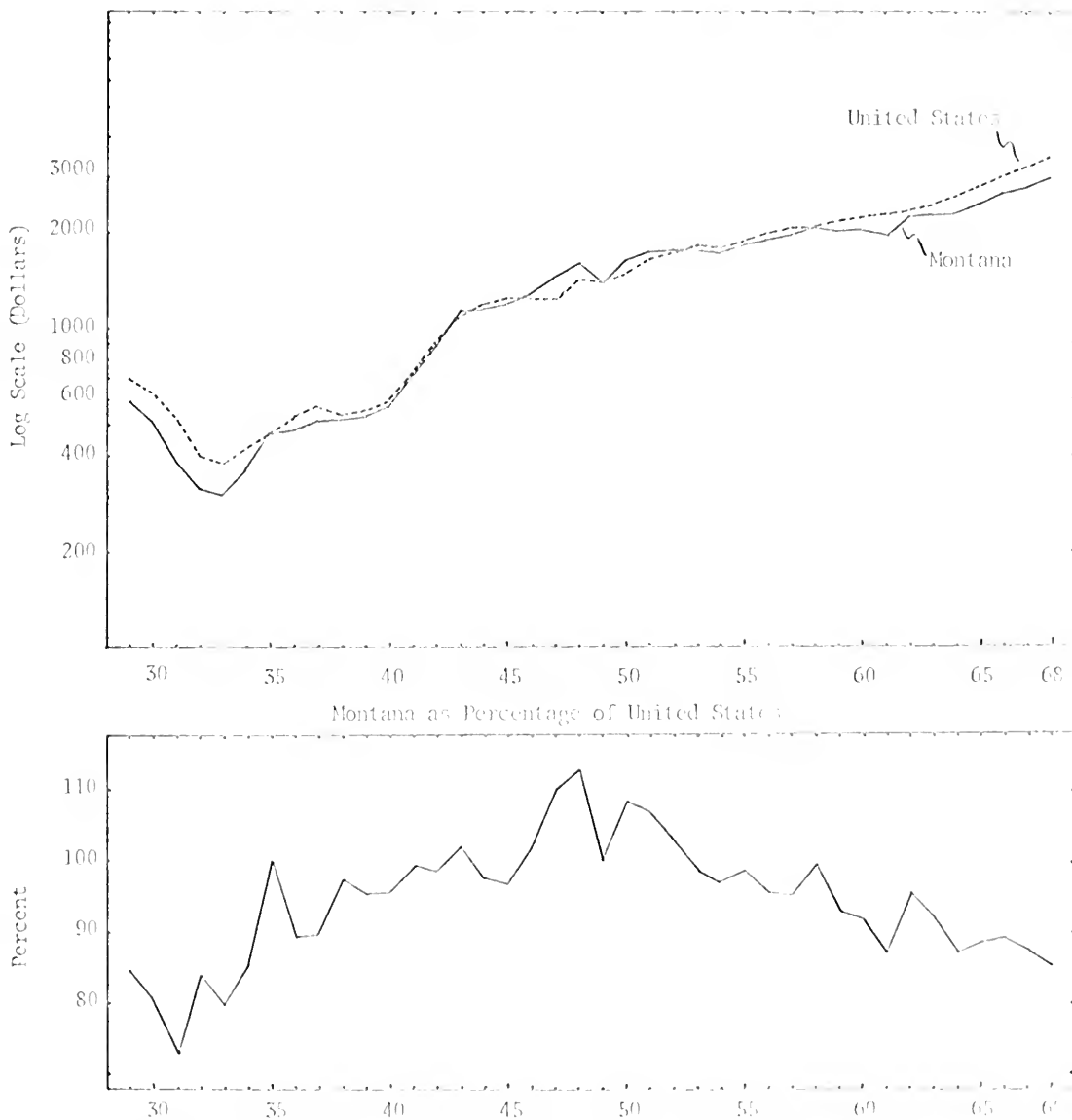
A region's total personal income normally rises over time for two reasons. The first is increasing production, which implies





Figure 3.3

Per Capita Personal Income  
Montana and United States  
1929-1968



Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.

Note: United States data include Alaska and Hawaii from 1959 to 1968.



rising income--for labor in wages, salaries, and fringe benefits, and for nonhuman resources (land and man-made capital goods), in rent, interest, and profits. The second source of increased income is price inflation. Inflation is reflected not only in rising prices of goods and services, but in increased money income to persons, corporations, and the government.

It is important to separate the two influences. Attention should be focused on the "real," as opposed to the "nominal," value of personal income. Current dollar figures--that is, personal income data unadjusted for the influence of inflation--exaggerate the growth of income because they reflect both rising real income, or purchasing power, and rising prices.

The latter influence, price inflation, can be eliminated by adjusting observed "nominal" levels of income for price changes, although the choice of a price index, or "deflator," is difficult. The one used here, called the "implicit price deflator for personal consumption expenditures," is an index of prices of all items that enter into personal consumption spending nationally. The weights assigned to different goods and services are derived from actual expenditure patterns. This index is superior, for our purposes, to the more widely-publicized consumer price index, which is strictly applicable only to the purchases of certain types of families.

The implicit price deflator for personal consumption expenditures is not, however, wholly satisfactory. It is a national index, and reflects average prices nationwide, rather than prices in Montana specifically. Moreover, the weights assigned to various goods and services are national weights, not Montana weights. For example, movements of the implicit deflator reflect changes in the costs of public transportation systems



such as the New York subway, which is a matter of no consequence to most Montanans. An index derived from Montana prices and consumption patterns would be preferable, but is not available.

Figure 3.1 shows the implicit price deflator for personal consumption expenditures between 1950 and 1968. (For comparison, the consumer price index is also shown. In recent years it has risen somewhat more rapidly than the implicit deflator.)

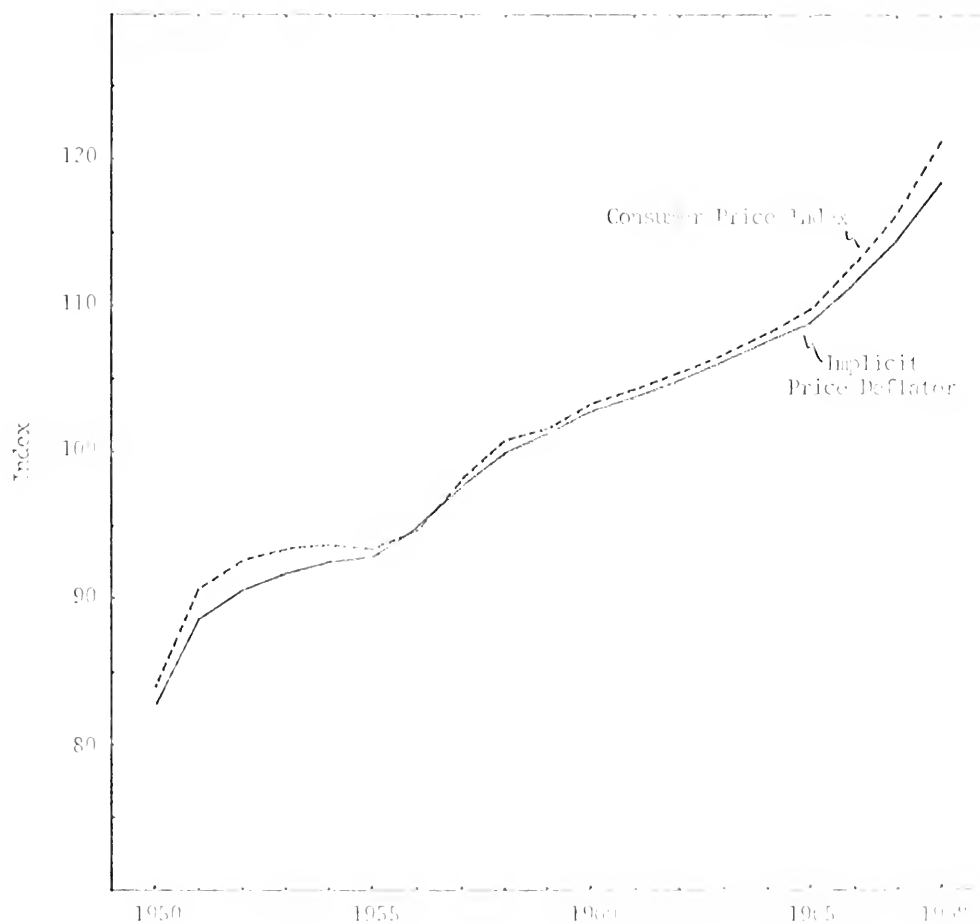
The implicit deflator published by the Commerce Department is arbitrarily set so that the price level for 1958 equals 100. (There is no particular reason for using 1958--it just happened to be the year chosen.) In 1960, its value was 102.9, indicating that prices in 1960 were, on the average, 2.9 percent higher than they had been in 1958.

The implicit deflator is used to convert current dollar personal income figures to "constant dollar" measures. Montana's personal income in 1960, expressed in dollars of 1958 purchasing power (or "1958 dollars"), is found by dividing 1960 total personal income measured in current dollars (\$1,385 million), by 102.9 and multiplying the resulting figure by 100. This calculation yields a figure of \$1,344 million, which is called "1960 total personal income in 1958 dollars." By similar reckoning, Montana's total personal income in 1950, measured in dollars of 1958 purchasing power, was \$1,160 million. This figure is derived by dividing the state's 1950 total personal income in current dollars (\$962 million) by the implicit price deflator for 1950 (82.9) and multiplying the result by 100.

Figure 3.5 shows personal income for Montana and the United States between 1950 and 1968, in 1958 dollars. Over the 18-year



Figure 3.4  
Implicit Price Deflator for Personal Consumption Expenditures  
and  
Consumer Price Index  
United States, 1950-1966

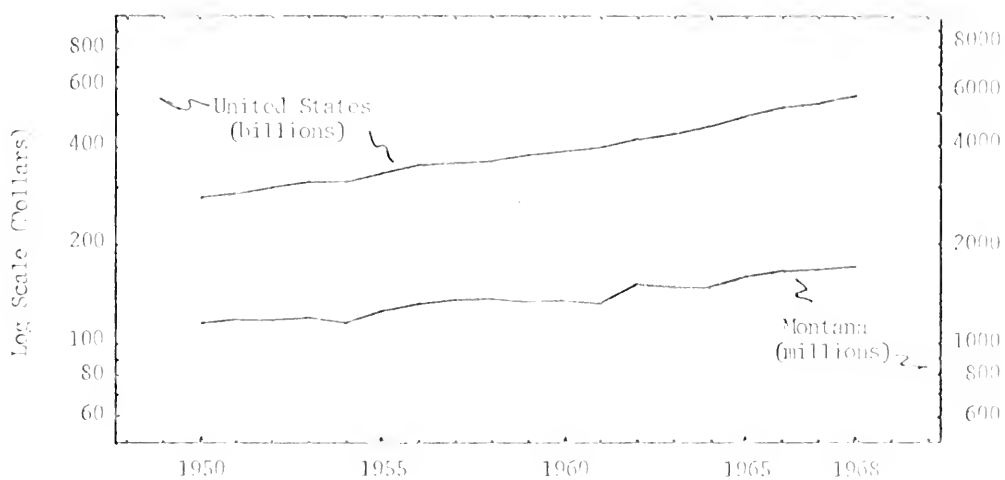


Sources: U.S. Department of Commerce, Office of Economic Analysis, and U.S. Department of Labor, Bureau of Labor Statistics.





Figure 3.5  
 Personal Income  
 Montana and United States  
 1950-1968  
 (1958 Dollars)



Source: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.

Note: United States data includes Alaska and Hawaii from 1960 to 1968.



period, "real personal income"--that is, income in dollars of constant purchasing power--rose 111 percent nationally, or at a compound annual rate of 4.2 percent. This compares with an average annual rate of increase in current dollar personal income (that is, income measured in current prices) of 6.3 percent. The difference between the two rates of growth is explained by the 2.0 percent average annual rate of increase in the implicit deflator.

For Montana, the average annual rate of increase of real personal income (income measured in 1958 dollars) between 1950 and 1968 was only 2.2 percent compared with a 4.3 percent annual rate of increase in personal income measured in current dollars. Thus, almost half of the increase in the current dollar figure represented price inflation.

The analysis of total and per capita personal income that follows deals with real, or deflated, income. Real income, not inflated income, is the significant factor in economic welfare.

#### THE LAGGING GROWTH OF REAL PERSONAL INCOME

Table 3.3 shows Montana's total personal income in 1958 dollars by components for 1950, 1960, and 1968, along with comparable data for the United States. Agricultural participation income, the first category shown, consists of the wages of hired farm workers and the income of farm proprietors. Nonagricultural civilian participation income includes all remaining wages and salaries except those of armed forces stationed in Montana, together with income of nonfarm proprietors and "other labor income." (A small part of the latter should be



TABLE 5.3

Personal Income, by Source  
Ontario and United States  
1950, 1960, and 1968

and

Average Annual Rate of Change, by Source  
Ontario and United States  
1950-1960 and 1960-1968  
(1958 Dollars)

	Millions of 1958 Dollars				Average Annual Percentage Change	
	Ontario		United States		1950-1960	1960-1968
	1950	1960	1950	1960	1950-1960	1960-1968
Agriculture						
Manufacturing income	\$ 514	\$ 178	\$ 19,625	\$ 14,156	-5.5	-3.2
Nonmanufacturing income						
Total civilian	675	877	202,864	207,104	2.6	3.0
Government income						
Total civilian	\$ 987	\$ 1,052	\$ 220,480	\$ 208,240	0.6	3.4
Government income						
Above military payrolls						
Government income	11	20	4,615	7,520	10.2	5.0
Government income	111	272	35,045	57,004	5.5	4.7
Government income	68	100	18,181	27,500	7.9	4.3
Government income	(14)	(56)	(5,257)	(8,948)	9.0	10.0
Government income	\$ 1,160	\$ 1,270	\$ 222,976	\$ 205,400	1.5	3.5

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.

Note: Details may not add to total because of rounding.

United States data excludes Alaska and Hawaii.



allocated to agriculture, but we have no statistical basis for such a division. Since farm wages are a small part of total wages, and since fringe benefits are not generally very significant in agriculture, the error is small.)

The pay of resident armed forces is shown separately in table 3.3. In 1950, military pay comprised only 1 percent of total personal income for Montana and slightly over 1 1/2 percent for the nation. It is shown separately, not because of its importance, but in order to single out civilian participation income, which later in this chapter will be related to the civilian employment figures analyzed in Chapter 2.

#### 1950-1960: Slow Increase in Personal Income

As table 3.3 indicates, the average annual rate of growth of Montana's real personal income during the 1950s was only 1.5 percent, compared with an annual growth rate of 3.5 percent for the United States as a whole.

The most important reason for the disparity of growth rates was the 5.5 percent annual rate of decline in Montana's real agricultural participation income. Real agricultural participation income also declined nationally, but at a smaller (3.2 percent) annual rate. Moreover, income of farms and ranches was much more important in Montana than in the nation as a whole, making the impact of agriculture's decline much greater in Montana.

Real nonagricultural civilian participation income rose between 1950 and 1960. In Montana, the average annual increase was only 2.6 percent, compared with a much higher 3.9 percent average nationally.





Montana's federal military payrolls increased at an average annual rate of 10.2 percent, in real terms, between 1950 and 1960; this was more than twice the national growth rate, but the effect on the overall growth of Montana personal income was minor. Both property income and transfer payments grew faster in Montana than they did nationally during the 1950s.

Obviously, the very slow growth of total real personal income in Montana between 1950 and 1960 traces entirely to the sluggishness of real civilian participation income, which accounts for most of the total. Over the decade as a whole, real civilian participation income from combined agriculture and nonagricultural industries increased only 0.6 percent per year, compared with a 3.4 percent average annual growth rate for the nation. The excruciatingly slow growth of real civilian participation income was, of course, due mainly to the rapid decline of real participation income in agriculture. But even outside agriculture, Montana's participation income grew much more slowly than did the national total.

#### 1960-1968: Faster Growth, Continued Relative Decline

During the next eight years, 1960-1968, the average annual growth rate of real personal income in Montana more than doubled, reaching 3.1 percent. As table 3.3 shows, however, the state continued to lag behind the nation; the growth rate of real personal income for the U.S. as a whole jumped to 5.1 percent, so that Montana's growth remained 2 percentage points below the national rate.

The decline in real agricultural participation income was reversed--but barely--during this period. From 1960 to 1968 it rose at a scant 0.3 percent per year in Montana, and 0.4 percent nationally.



Montana's real civilian nonagricultural participation income increased at an average rate of 3.0 percent per year between 1960 and 1968, somewhat faster than it had during the 1950s. But for the nation as a whole this component rose at an average annual rate of 5.0 percent. The discrepancy between these two growth rates was the most important single factor involved in the lagging growth of Montana's personal income between 1960 and 1968.

Federal military payrolls, still only a minor element in total personal income, rose at a real average annual rate of 5.6 percent in Montana during the 1960s, slightly below the national rate. Property income, which had risen considerably faster in Montana than it had nationally between 1950 and 1960, failed to increase at the national rate during the next eight years. Real income from transfer payments also failed to rise as fast in Montana as it did nationally between 1960 and 1968.

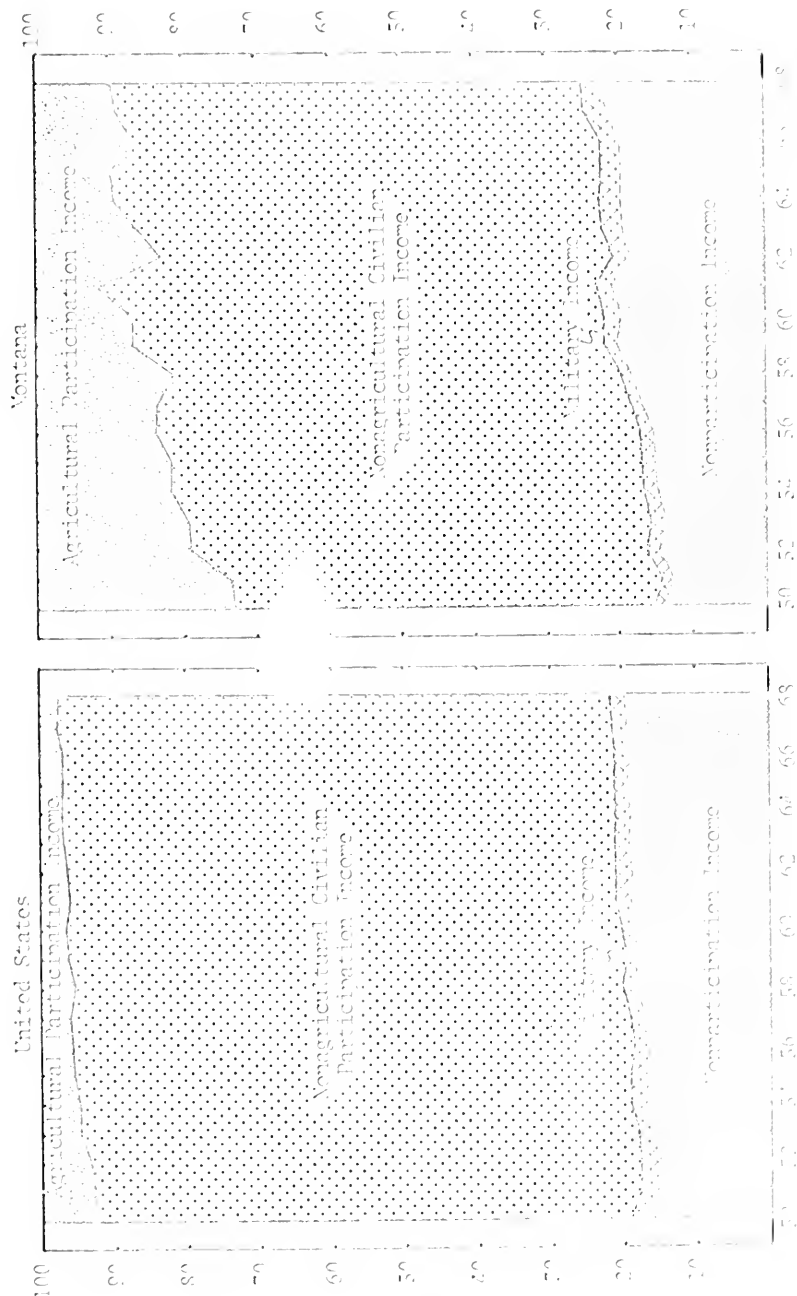
To repeat, the main reason for the slow increase in real income in Montana during the 1960s was the lagging growth of real civilian participation income. During the eight years 1960-1968, this component rose at an average annual rate of 2.6 percent, a full 2 percent faster than it had grown during the 1950s, but well below the 4.8 percent growth rate for the nation as a whole.

Agriculture figured less importantly in the slow growth of Montana's real civilian participation income during the 1960s than it had during the 1950s, for two reasons. First, the state's dependence on farming and ranching was declining over the entire period from 1950 to 1968. Whereas agricultural participation income made up 27 percent of total personal income in 1950, it accounted for only 11 percent by 1968 (see figure 3.6).



Figure 3.6

Percentage Distribution of Total Personal Income, by Source  
 Montana and United States  
 1950-1968



SOURCE: U.S. Department of Commerce, Office of Business Economics, and Montana Economics Study.  
 NOTE: United States data includes Alaska and Hawaii from 1960 to 1968.



The slow growth of this industry therefore exerted less drag on total personal income as the 1960s wore on. Second, Montana agriculture fared better during the 1960s than it had during the 1950s, both absolutely and relative to agriculture across the nation.

Montana's nonagricultural civilian participation income, which became increasingly important as activity shifted away from agricultural pursuits, lagged further behind the national growth rate during the 1960s than it had during the 1950s. Thus, increasingly over the years, the explanation of Montana's slow growth has shifted from agriculture's misfortunes to the lack of robustness in the nonagricultural sector.

The diversification of economic activity toward greater reliance on nonagricultural industries has not, then, resulted in a closing of the gap between the rates of growth of real personal income in Montana and the United States.

#### PER CAPITA PERSONAL INCOME

The fact that, more or less continuously between 1950 and 1968, Montana's personal income declined relative to the national total does not necessarily imply that there was a corresponding relative deterioration in the economic welfare of Montana residents, since the state's population was also declining relative to the national total.

However, the fact that per capita personal income fell from 100 percent of the United States average in 1950 to 86 percent in 1968 is convincing evidence that Montanans were not enjoying anything like a full share of national prosperity. Had the state's real per capita





personal income risen at the national rate between 1950 and 1968, it would have amounted to \$3,128 (in 1958 dollars) in the latter year, more than one-fourth higher than the actual figure of \$2,470 (in 1958 dollars). It has already been pointed out that Montana ranked second-to-last among the 48 contiguous states in growth of per capita income between 1950 and 1968. As table 3.4 shows, Montana's ranking in terms of the level of per capita personal income dropped from twelfth in 1950 to twenty-fifth in 1960, and then to thirty-first in 1968.

The miserable growth of real per capita personal income was the result of a number of forces which we shall now try to untangle.

#### Per Capita Personal Income, 1950-1960

It is important to bear in mind that the start of the 1950s was a period of unusual prosperity for Montana. The most obvious reason was the excellent market for agricultural products and the abundant production of these commodities. But Montana's prosperity in 1950 went beyond agriculture--in that year employment was no higher than it was nationally, an unusual occurrence for Montana.

Table 3.5 shows that Montana's relative advantage in 1950 traced entirely to the unusually high level of per capita civilian participation income which, at \$1,664 (in 1958 dollars), was 14 percent above the national average of \$1,458. Per capita amounts of the other types of income shown in table 3.5--military payrolls, property income, and transfer payments--were well below the national average. By 1960, the story was much different. Per capita civilian



TABLE 3.4

Per Capita Personal Income, by State  
Ranked From High to Low  
1950, 1960, and 1968

Rank	1950		1960		1968	
	State	Income	State	Income	State	Income
1	Delaware	\$2131	Nevada	\$2856	Connecticut	\$1756
2	Nevada	2019	Connecticut	2807	New York	1151
3	Connecticut	1875	Delaware	2757	Illinois	5981
4	New York	1873	New York	2746	California	5969
5	California	1852	California	2710	Nevada	5977
6	New Jersey	1834	New Jersey	2708	New Jersey	5951
7	Illinois	1825	Illinois	2650	Massachusetts	5835
8	Michigan	1700	Massachusetts	2459	Delaware	5795
9	Washington	1674	Washington	2349	Maryland	5742
10	Wyoming	1669	Maryland	2343	Washington	5688
11	Massachusetts	1633	Ohio	2334	Michigan	5675
12	MONTANA	1622	Michigan	2324	Rhode Island	5549
13	Ohio	1620	Colorado	2275	Ohio	5509
14	Oregon	1620	Wyoming	2263	Pennsylvania	5419
15	Rhode Island	1606	Pennsylvania	2242	Indiana	5412
16	Maryland	1602	Oregon	2235	Wisconsin	5363
17	Pennsylvania	1541	Rhode Island	2211	Minnesota	5341
18	Indiana	1512	Indiana	2188	Colorado	5340
19	Nebraska	1491	Wisconsin	2175	Oregon	5317
20	Colorado	1487	Kansas	2161	Kansas	5303
21	Iowa	1485	New Hampshire	2143	Iowa	5265
22	Wisconsin	1477	Minnesota	2116	New Hampshire	5259
23	Kansas	1443	Missouri	2115	Missouri	5257
24	Missouri	1431	Nebraska	2110	Nebraska	5239
25	Minnesota	1410	MONTANA	2037	Florida	5191
26	Texas	1349	Arizona	2032	Wyoming	5190
27	Arizona	1331	Iowa	1986	Vermont	5072
28	New Hampshire	1323	Utah	1968	Virginia	5068
29	Utah	1309	Florida	1950	Texas	5029
30	Idaho	1295	Texas	1925	Arizona	5027
31	Florida	1281	New Mexico	1890	MONTANA	4950
32	North Dakota	1263	Oklahoma	1861	Oklahoma	4880
33	South Dakota	1243	Idaho	1849	South Dakota	4876
34	Virginia	1228	Maine	1844	Maine	4821
35	Maine	1185	Vermont	1841	Utah	4790
36	New Mexico	1177	Virginia	1841	Georgia	4781
37	Oklahoma	1143	South Dakota	1782	North Dakota	4730
38	Vermont	1121	North Dakota	1715	Idaho	4668
39	Louisiana	1120	Louisiana	1655	North Carolina	4664
40	West Virginia	1065	Georgia	1639	New Mexico	4651
41	North Carolina	1057	West Virginia	1594	Kentucky	4645
42	Georgia	1034	Kentucky	1571	Louisiana	4634
43	Tennessee	994	North Carolina	1561	Tennessee	4579
44	Kentucky	981	Tennessee	1513	West Virginia	4479
45	South Carolina	893	Alabama	1488	South Carolina	4389
46	Alabama	880	South Carolina	1377	Alabama	4337
47	Arkansas	825	Arkansas	1372	Arkansas	4322
48	Mississippi	755	Mississippi	1205	Mississippi	4081

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.



TABLE 3.5

Per Capita Personal Income, by Type  
Montana and United States  
1950 and 1960  
(1958 Dollars)

	1950		1960		Average Annual Percentage Change, 1950-1960	
	Montana	U.S. Percentage of U.S.	Montana	U.S. Percentage of U.S.	Montana	U.S.
Per capita amounts of:						
Civilian participation income	\$1664	\$1458	\$1949	\$1721	-0.1	1.1
Military payrolls	18	31	43	42	0.1	3.1
Property income	187	218	281	286	4.3	3.1
Transfers for retirement	134	120	160	155	3.5	3.2
Total personal contributions for social insurance	(24)	(25)	(55)	(50)	8.2	8.1
TOTAL PER CAPITA PERSONAL INCOME	\$1957	\$1804	\$1979	\$2152	0.1	1.2

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.

Note: Details may not add to total because of rounding.

Excludes Alaska and Hawaii.



participation income in 1958 dollars had fallen, to \$1,549, or at an average annual rate of 0.7 percent. Nationally, the per capita figure had risen during the same period to \$1,721, an annual growth rate of 1.7 percent. As a result, in 1960, Montana's per capita personal income was 10 percent below the national average.

Real per capita military payrolls, property income, and transfer payments, on the other hand, rose faster in Montana than they did nationally during the 1950s. By 1960 all were near or above the national averages. The effects of these improvements were overwhelmed, however, by the absolute and relative deterioration of real per capita civilian participation income. By 1960, Montana's per capita personal income stood at only 92 percent of the national average, compared with 108 percent a decade earlier. Real per capita income of Montana residents had risen at an average annual rate of only 0.1 percent over the 10-year period, compared with a 1.8 percent average annual increase for the nation as a whole.

The 1950s will not go down in history as unusually prosperous years for the United States; but in Montana's history they will have to be counted as excruciatingly stagnant economically.

Reasons for the Decline in Per Capita Participation Income, 1950-1960. The villain was clearly participation income--the kind of income that comes mostly from sweat of the brow. Why was this sweat returning less per capita in 1960 than it had been in 1950?

The reason was that there was less sweat per capita. Real participation income per capita equals real participation income per worker times the proportion of the population engaged in civilian pursuits.





As table 3.6 shows, real participation income per worker, measured in 1958 dollars, actually rose from \$1,318 in 1950 to \$1,452 in 1960, or 3.1 percent. But the proportion of the population at work fell from .385 to .348, or by 9.7 percent. When these dollars are spread among Montana's total population, the arithmetically inevitable result is a 6.9 percent decline in real participation income per capita from \$1,661 to \$1,549.

That explains why Montana's figure declined. But what about the national rise? In fact, the same two forces were at work nationally, but in differing degrees. For the U.S. as a whole, participation income per worker in 1958 dollars rose from \$3,605 to \$4,458, or 24 percent, while the proportion of the population employed fell from .405 in 1950 to .386 in 1960, or by 4.7 percent.

There are, then, two questions to answer. First, why did Montana's ratio of employment to population fall so much more rapidly than the nation's? Second, why did Montana's real participation income per worker rise so much more slowly than the nation's?

The Decline in the Employment Ratio. As Chapter 2 indicated, the postwar baby boom swelled the ranks of preschoolers and school-age children during the 1950s. At the same time, tendencies toward greater longevity and earlier retirement increased the proportion of the population who had left the employment rolls.

Both forces were at work throughout the country, and both help to explain why the ratio of employed persons to total population fell nationally during the 1950s. But why was this ratio lower, and why did it fall so much faster in Montana?



TABLE 3.6

Sources of Differences in Civilian Per Capita Participation Income,  
Montana and United States  
1950 and 1960  
(1958 Dollars)

	1950		Montana as Percentage of U.S.	1960		Montana as Percentage of U.S.
	Montana	U.S.		Montana	U.S.	
a. Civilian participation income per worker	\$4318	\$3603	120	\$4452	\$4458	100
b. Ratio of employment to population	<u>.385</u>	<u>.405</u>	<u>.95</u>	<u>.348</u>	<u>.386</u>	<u>.90</u>
c. Per capita civilian participation income	\$1664	\$1458	114	\$1549	\$1721	90

Sources: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Office of Business Economics; and Montana Economic Study.

Note: Civilian participation income per capita shown in table may differ slightly from the product of (a) and (b) because of rounding errors in (a) and (b).

United States data excludes Alaska and Hawaii.



Our answer to the first question is incomplete. Our explanation is that labor force participation rates for Montana females of working age are lower than the national average, compounded by the fact that females whose participation rate, even nationally, is far lower than that of males, make up a greater fraction of the state's population. Another reason is the greater seasonality of employment in Montana. (The employment numbers used here are averages of monthly figures, and if a person works only nine months out of the year, he shows up as three-fourths of one worker in the year's employment total.)

There were two main reasons why Montana's employment/population ratio fell faster than that of the United States. First, as Chapter 2 explained, whereas the state's unemployment rate in 1950 was the same as the national rate, by 1960 it was considerably higher--6.7 percent, compared with an average of 5.6 percent of the United States as a whole.

Second, as was also explained in Chapter 2, the age-distribution of out-migration from Montana during the 1950s was very selective. A large proportion of those leaving the state were young people with no children. The lowest net out-migration rates were found among families with school-age and preschool children. This pattern of out-migration accentuated the rise in the ratio of young dependents to total population. (It also tended to raise the ratio of children in school to population, and hence push up the per capita tax burden.)

The Slow Rise of Participation Income Per Worker. The slow increase in participation income per civilian worker reflected the anemic state of Montana's economy during the 1950s. Over the decade



agricultural employment fell by 15.6 thousand--an average annual decline of 3 percent--and total employment rose far too slowly to absorb the "natural" increase in the labor force.

In 1959, Montana agriculture was doing well, especially in comparison to more recent years. As table 3.7 shows, participation income per worker in this sector was \$5,940 (in 1956 dollars), 127 percent above the national average. Crop and livestock prices were good--the average price of a bushel of Montana wheat that year was \$1.87, and fat calves brought \$27.68 per cwt.

Outside agriculture, participation income per civilian worker in Montana was \$3,851 (in 1958 dollars), just 2 percent above the national average. The explanation for Montana's high participation income per worker in all civilian industries combined therefore traces almost entirely to the good fortunes of agriculture. Not only was income per worker extraordinarily high in that sector, but agricultural employment accounted for 25 percent of total jobs in Montana, compared with only 12 percent nationally. At the time, it surely seemed as if the state's eggs were in the right basket.

This good fortune melted away as the 1950s progressed. The enormous technological advances in agricultural production methods entailed large-scale substitutions of machinery for labor, especially in crops (as opposed to livestock). Farm workers and even farm proprietors, in their role as laborers tended to become surplus commodities, like the products they produced. The vast increase in agricultural output ran head on into markets that were expanding very slowly. Despite various forms of government intervention,





TABLE 3.7

Civilian Participation Income Per Worker  
Montana and United States  
1950 and 1960  
(1958 Dollars)

	1950		1960		Percentage Change 1950-1960			
	Montana	United States	Montana as Percentage of United States	Montana as Percentage of United States				
Agricultural participation income per worker	\$5940	\$2624	227	\$4537	\$2470	184	-34	-6
Civilian nonagricultural partic- ipation income per worker	3851	3741	102	4435	4638	96	+16	+24
Total civilian participation income per worker	4318	3603	120	4452	4458	100	+3	+24

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.

Note: United States data excludes Alaska and Hawaii.



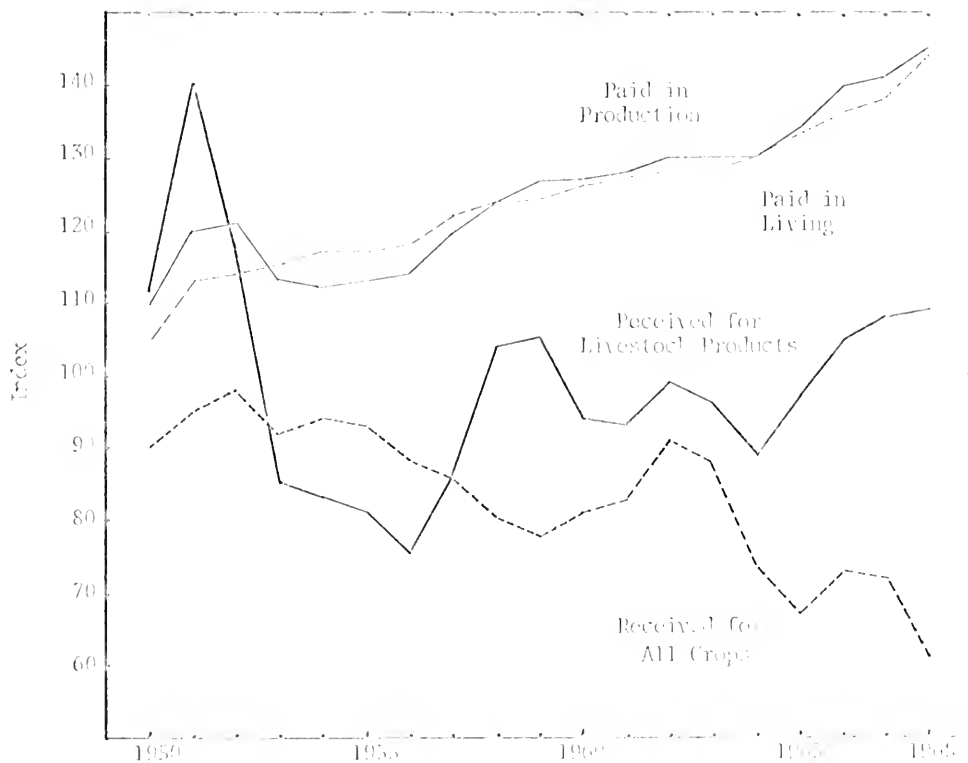
crop prices declined, while the index of prices paid by farmers (both for goods and services used in production and for living expenses) increased, as figure 3.7 shows.

As the top panel of figure 3.8 indicates, real participation income per worker in agriculture fluctuated widely between 1950 and 1960. This irregularity reflected the basic instabilities faced by farmers and ranchers. But the trend was downward, and at a rate considerably greater for Montana than for the nation as a whole. (Despite its slow growth, however, participation income per agricultural worker in Montana was still 54 percent above the national average in 1960.) Moreover, employment was shifting rapidly toward nonagricultural pursuits, and here the state failed to retain the small advantage it had shown in 1950. Between 1950 and 1960, real participation income per civilian worker outside agriculture in Montana increased 16 percent, to \$4,455. This gain fell considerably short of the national advance of 24 percent (from \$3,741 in 1950 to \$4,638 in 1960). By 1960, then, Montana's civilian workers outside agriculture were earning, on the average, only 96 percent as much as their national counterparts.

In addition, since in 1960 participation income per worker was still considerably higher in agriculture than in nonagricultural industries, the shift away from agricultural employment tended to reduce the weighted average of income per civilian worker in all industries between 1950 and 1960. Nationally, on the other hand, participation income per worker was considerably higher in nonagricultural industries than in agriculture. Therefore, for the nation as a whole, the shift away from agricultural employment worked to increase average participation income per civilian worker.



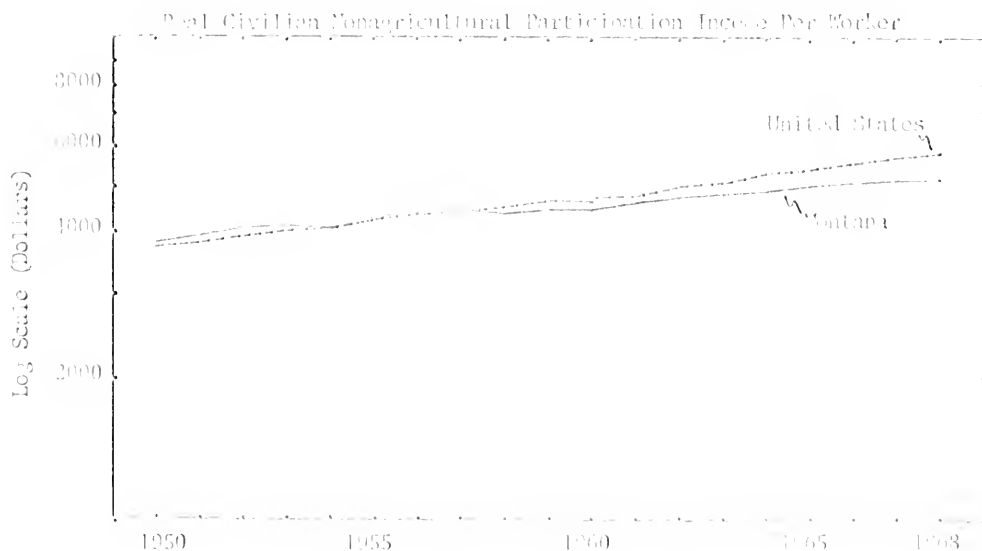
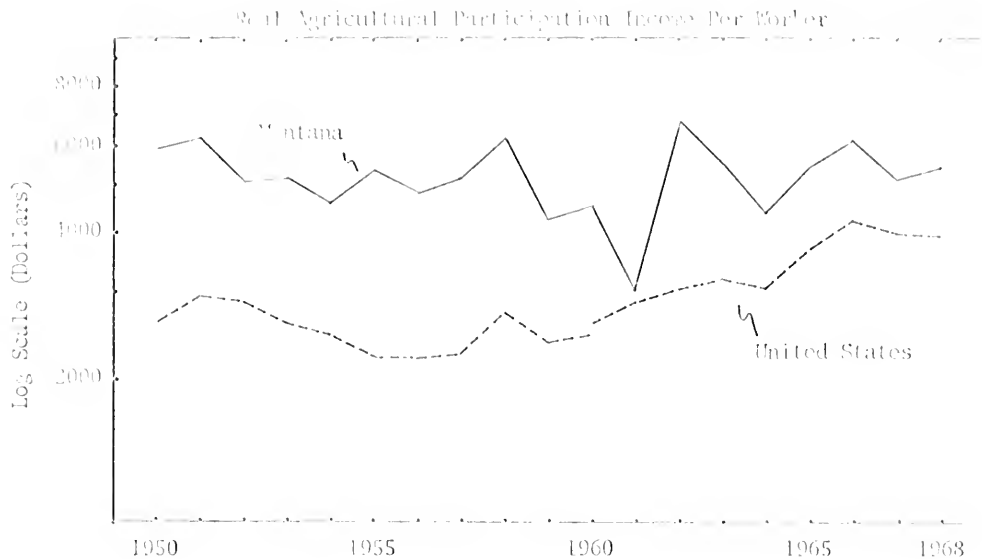
Figure 3.7  
 Index of Prices Paid and Prices Received by Farmers  
 Montana, 1950-1965



Source: Montana Agricultural Experiment Station, Montana State University, Bozeman.



Participation Income Per Worker  
 Agricultural and Civilian Nonagricultural Sectors  
 Montana and United States  
 1950-1968  
 (1953 Dollars)



Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.

Note: The United States figures include Alaska and Hawaii from 1950 to 1959 and include Alaska and Hawaii from 1960 to 1968. There are no figures available for the United States in 1960.





To summarize, in terms of the statistics presented above, the main reasons that participation income per worker in Montana exceeded the national average by 20 percent in 1950 were (a) the relatively high income per worker in agriculture in the state and (b) the heavy concentration of Montana employment in agriculture. The main reasons for the very slow growth of participation income per civilian worker over the next decade--only 3 percent--were (a) the declining fortunes of agriculture which resulted in a 24 percent decline in real participation income per worker in that industry; (b) the relatively slow growth of participation income per civilian worker outside agriculture; and (c) the shift of employment away from agriculture where, despite its decline, income per worker still remained high relative to nonagricultural pursuits.

Some Inferences. One must be careful about drawing inferences from these statistics. For example, it would be wrong to conclude that participation income per worker would have held up better during the 1950s had fewer workers left Montana's farms and ranches, simply because average participation income per worker was higher in agriculture than it was in nonagricultural industries. The high income per worker in agriculture reflects the net return to the land, and investment in machinery and equipment, of farm proprietors as well as the remuneration of farmers and hired workers for their labor services. Census data show that hired farm laborers had abysmally low incomes in both 1950 and 1960, partly reflecting low wages per hour or day worked, and partly reflecting the seasonality of their employment.

Thus, the relatively higher average participation income per worker in agriculture does not imply that agricultural workers are worth more, or earn more, for their labor. Rather, it is the other



way around; the fact that workers moved off the farms in large numbers is eloquent testimony that opportunities were better elsewhere. It should also be noted that many farm proprietors earned very meager incomes, even though the average for farm proprietors was high.

What the agricultural participation income figures do reveal is that Montana's farm proprietors, on the average, earned substantial amounts from the combination of their land, machinery and equipment, and labor, but that these earnings were seriously eroded during the late 1950s.

It also should be kept in mind that most, if not all, of the overall growth in Montana's employment during the 1950s reflected an increase in jobs held by women. This has generally been the case for the state since the 1920s. Female labor-force participation rates have tended to rise both nationally and in Montana. One reason for the rising female participation rate, especially in Montana's case, is that farm women generally have not been counted in labor force and employment statistics, even though they may, in fact, be contributing significantly to the production process. As women migrate off farms and seek or obtain jobs, they are counted in the labor force and in total employment. Thus, the conventional statistics tend to understate farm employment (and thereby overstate agricultural income per worker).

The increase of women workers in nonagricultural industries also helps to explain the relatively slow increase in Montana's participation income per worker in nonagricultural civilian pursuits, since, generally, women are paid less for their work than are men. To some extent, this may be due to lower productivity. But it also appears to reflect a nationwide systematic discrimination against women. In any event,



the substantial increase in women workers contributed to the relatively slow growth of civilian participation income per worker outside agriculture in Montana during the 1950s.

At least equally important in explaining this slow growth was the greater shift, in the state, of nonagricultural employment away from primary industries and into derivative industries, described in detail in Chapter 2. Derivative industries are concentrated in the production of services, and productivity gains in service industries have been much smaller than in the goods-producing industries. Moreover, the service industries are generally less unionized, and thus in a state with excess labor, it is easier for surplus workers to crowd into service industries, because restrictions on job-competition are less severe. This tends to hold down earnings per worker in those areas.

Figure 3.9 shows average annual earnings per worker in Montana by major industry groups in 1950, 1960, and 1968. The shortest bars, which represent the lowest earnings, are found in wholesale and retail trade, services, and state and local government. Yet these three categories provided most of the increase in jobs in Montana between 1950 and 1968. Although the same was true nationally, the shift toward these lower-paying jobs in Montana was much more pronounced.

#### Overview: 1950-1960

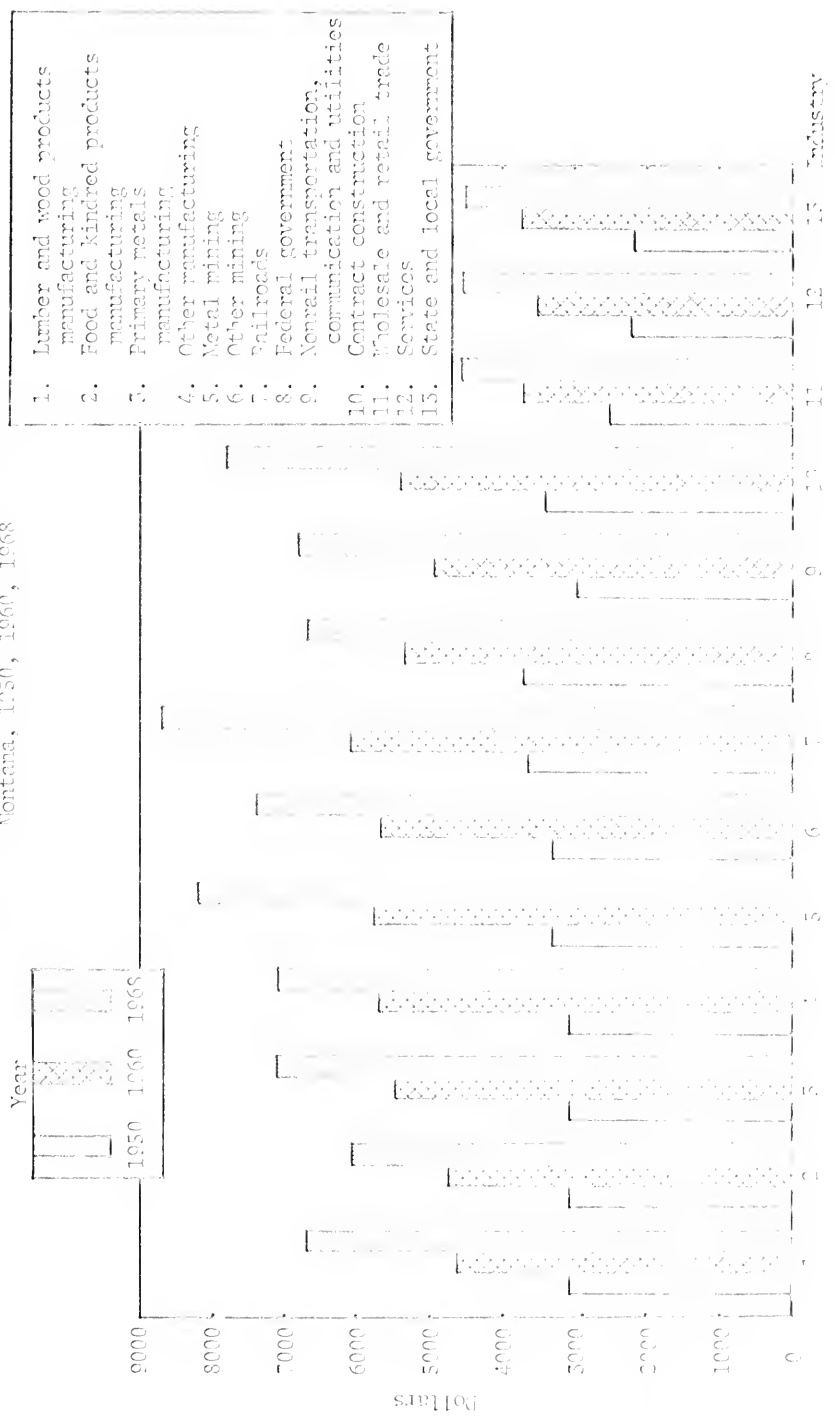
Table 3.8 is designed to quantify the factors that determined the slow growth of real per capita income in Montana between 1950 and 1960 and to show why the state lagged so far behind the nation.

For civilian participation income, the figures shown in the table take into account not only the different rates of change in average



Figure 5.9

Average Annual Earnings by Major Industry Groups  
Montana, 1950, 1960, 1968



Sources: U.S. Department of Commerce, Office of Business Economics; Employment Security Commission of Montana, Helena; and Montana Economic Study.

Note: Because of limitations on covered payroll worker data, federal government, railroads, services, and state and local government average annual earnings were calculated by dividing individual wage and salary disbursements in personal income by employment.





TABLE 3.8

Factors Accounting for Changes in Per Capita Personal Income  
 Montana and United States  
 1950-1960  
 (1958 Dollars)

	<u>Montana</u>	<u>United States</u>
1. Change in agricultural participation income per worker	\$-105	\$- 6
2. Change in civilian nonagricultural participation income per civilian worker	+111	+220
3. Shift of civilian employment to nonagricultural industry	- 36	+ 22
4. Change in proportion of population employed in civilian industry	-163	- 76
5. Total change in civilian participation income per capita	\$-115	\$-263
6. Change in military income per capita	+ 25	+ 11
7. Change in property income per capita	+ 94	+ 67
8. Change in transfer payments per capita	+ 46	+ 34
9. Loss: Change in personal contributions for social insurance per capita	(+ 23)	(+ 27)
10. Total change in per capita personal income	\$4 22	\$42.0

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Source: Montana Economic Study.

Note: Details may not add to total because of rounding.



income per worker in agriculture and nonagricultural industries, but also the relative importance of the two sectors and the ratio of employment to population as well. For example, the reduction of real participation income per worker in agriculture had a much more important influence on per capita personal income in Montana than it did nationally for two reasons: first, the decline in real participation income per agricultural worker was nearly ten times larger in the state (\$1,404) than it was nationally (\$144). Second, agricultural employment was much more important in Montana than it was nationally, so that every dollar of reduction in real participation income per worker in agriculture had a greater negative impact on per capita income. Thus, as the first line of table 3.8 indicates, declining income per worker in agriculture tended to reduce real per capita personal income in Montana by \$103, compared with only \$6 nationally.

Outside agriculture, real participation income per worker rose, both in Montana and the United States. As the second line of table 3.8 indicates, the positive influence on real per capita income was much greater nationally (\$320) than it was in Montana (\$177), both because real participation income per worker rose faster nationally than it did in the state and because nonagricultural employment was more important relative to total employment at the national level.

The third factor shown, the shift of employment away from agriculture, exerted a depressing influence on per capita personal income in Montana. Table 3.8 shows that this factor tended to reduce the state's per capita income by \$26 between 1950 and 1960. The reason was that even though Montana's agricultural income per worker fell during the 1950s, it was still higher than income per worker outside



agriculture. For the U.S. as a whole, the opposite was true, so that the shift of employment away from agriculture exerted a \$25 positive effect on national per capita real income.

The fourth factor, the decline in the ratio of employment to population, tended to lower per capita personal income, both in Montana and across the United States. But for the state, the negative influence of this factor--\$163 per person--was much more powerful than it was nationally. The reason was that the employment/population ratio fell much faster in Montana.

The fifth line summarizes the effect of these four factors combined on per capita civilian participation income. For Montana, the four influences taken together caused per capita income to fall by \$115, whereas for the nation they produced a \$263 increase.

All other sources of personal income--federal military payrolls, property income, and transfer payments--provided bigger increases in Montana's per capita figure than they did nationally during the 1950s, although not by enough to offset the state's lagging per capita civilian participation income. Per capita contributions for social insurance, which reduce personal income, also rose more rapidly in the state than they did nationally, but the difference was slight.

The net effect of all these changes (the sum of lines 5, 6, 7, and 8 minus line 9) was a \$22 increase in per capita personal income of Montana residents, compared with a \$349 increase in the national average. Except for the minor difference in the effect of increased contributions for social insurance, the difference was due entirely to the decline in per capita civilian participation income, which more than offset the relative strength of other sources of income.



1960-1968: Per Capita Personal Income Statistics

Changes in Data. Data for the United States used in this section include Alaska and Hawaii, whereas figures cited earlier in this chapter do not. This raises problems of comparability, but detailed analysis of national per capita personal income for years since 1960 requires that Alaska and Hawaii be included because there are no data available that exclude them. The effect of including these two states is to make the national figures on income per worker and income per capita slightly higher than the ones used in the previous section.

In addition, the national agricultural and "all other" employment figures used in this section differ from those used in the previous section; they include only workers aged 16 and over, whereas the earlier employment numbers included all workers aged 14 and over. Again, a revision of the basic data series makes this switch necessary. The revision does not apply to the estimates of agricultural and "all other" employment for Montana. The effect of the exclusion of workers aged 14 and 15 from the national data is to lower the ratio of employment to population, and to raise participation income per worker, especially in agriculture. But since the changes apply to both the 1960 and 1968 data used here, the trends in the employment/population ratio and income per worker are not distorted.

Continued Relative Decline. Between 1960 and 1968, Montana's per capita personal income, measured in 1958 dollars, rose much faster than it had during the previous decade. The average annual increase was 2.8 percent, from \$1,979 in 1960 to \$2,470 in 1968. This compared with an average annual increase of only 0.1 percent during the preceding decade.





The move from stagnation to substantial growth of per capita real income was, of course, a welcome one. But the decline in state per capita income relative to the national average continued. For the United States as a whole, per capita personal income in 1958 dollars rose from \$2,153 in 1960 to \$2,885 in 1968, or at an average annual rate of 3.7 percent. As a result, 1968 per capita income of Montana residents was only 86 percent of the national average, down from 92 percent in 1960.

Table 3.9 indicates that the most important reason for Montana's continued relative decline was the lagging growth of per capita civilian participation income. Between 1960 and 1968, that figure increased \$305 in 1958 dollars (from \$1,549 to \$1,854), or at an average annual rate of 2.3 percent. This was, to be sure, a welcome change from the decline that occurred during the 1950s. But nationally, per capita civilian participation income increased \$532 in 1958 dollars (from \$1,721 to \$2,253), or at an average annual rate of 3.4 percent. As a result, by 1968 Montana's civilian participation income per capita had fallen to 82 percent of the national average, down from 90 percent in 1960.

Military payrolls rose faster in Montana than they did nationally, but the difference amounted to only \$4 per capita. Both per capita property income and per capita income from transfer payments failed to grow as fast in Montana as they did nationally, which was a reversal of the experience of the 1950s.

Nonetheless, most of the disparity in growth rates of per capita personal income between Montana and the United States from 1960 to 1968 traces to the slow rise in per capita participation income. Even



TABLE 5.9

Per Capita Personal Income, by Type  
Montana and United States  
1960 and 1968  
(1958 Dollars)

	1960		1968		Average Annual Percentage Change, 1960-1968	
	Montana	U.S.	Montana as Percentage of U.S.	Montana	U.S.	Montana U.S.
Per capita amounts of:						
Civilian participation income	\$1549	\$1721	90	\$1854	\$2253	82
Military payrolls	45	44	99	64	61	105
Property income	281	285	99	390	415	94
Transfer payments	150	154	104	245	259	98
Less: personal contributions for social insurance	(53)	(50)	106	(32)	(25)	96
TOTAL PER CAPITA PERSONAL INCOME	\$1979	\$2153	92	\$2470	\$2885	85

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.

Note: Details may not add to total because of rounding.

United States data includes Alaska and Hawaii.



though this figure, which had fallen during the 1950s, rose substantially, Montana continued to lag well behind the national trend.

The Slow Growth of Per Capita Participation Income, 1960-1968.

Between 1950 and 1960, despite the fact that civilian participation income per worker increased, Montana's per capita civilian participation income fell because of the rapid decline in the proportion of the population at work.

During the 1960s, as table 3.10 shows, Montana's ratio of employment to population rose, reaching .364 in 1968, compared with .348 in 1960. Nationally, the employment ratio also increased, from .384 in 1960 to .398 in 1968. The fact that Montana's employment ratio in 1968 was still 9 percent below the national average helps to explain the persistence of the state's relatively low per capita participation income. But at least the difference did not continue to increase during the 1960s. Therefore, the further relative decline in Montana's per capita civilian participation income cannot be attributed to this factor.

Instead, the continued relative decline was due entirely to the slow rate of increase in participation income per worker. As table 3.10 indicates, this figure, even though it increased at an average annual rate of 1.7 percent, fell from 99 percent of the national average in 1960 to only 90 percent in 1968. Thus, relative to the national average, Montana's participation income per worker fell by a full 10 percent over the 8-year period.

Both the agricultural and nonagricultural sectors were involved in this relative decline, as table 3.11 shows. In agriculture, Montana's 1968 participation income per worker--\$5,404--was still 40 percent above



TABLE 3.10

Sources of Differences in Civilian Per Capita Participation Income  
Montana and United States  
1960 and 1968  
(1958 Dollars)

	1960		Montana as Percentage of U.S.	1968		Montana as Percentage of U.S.
	Montana	U.S.		Montana	U.S.	
a. Civilian participation income per worker	\$4452	\$4485	99	\$5097	\$5667	90
b. Ratio of employment to population	<u>.348</u>	<u>.384</u>	<u>91</u>	<u>.364</u>	<u>.398</u>	<u>91</u>
c. Per capita civilian participation income	\$1549	\$1721	90	\$1854	\$2253	82

Sources: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Office of Business Economics; and Montana Economic Study.

Note: Civilian participation income per capita shown in table may differ slightly from the product of (a) and (b) because of rounding errors in (a) and (b).

United States data includes Alaska and Hawaii.





TABLE 5.11

Participation Income Per Worker  
Montana and United States  
1960 and 1968  
(1950 Dollars)

	1960			1968			Percentage Change 1960-1968	
	Montana	United States	Montana as Percentage of United States	Montana	United States	Montana as Percentage of United States	Montana	United States
Agricultural participation income per worker	\$4537	\$2697	174	\$5404	\$3864	140	+19	+48
Civilian nonagricultural partic- ipation income per worker	4435	4645	95	5050	5758	88	+14	+24
Total civilian participation income per worker	4452	4703	95	5097	5267	90	+14	+26

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study.

Note: United States data includes Alaska and Hawaii.



the national average. But in 1960, it had been 71 percent higher than the national average. Outside agriculture, participation income per worker in Montana was \$5,050 in 1968, 12 percent below the national average. In 1960, it had been only 5 percent lower than the national average.

These developments reflect both the continued difficulties of Montana farmers and ranchers and the growing job gap--the fact that there were simply not enough jobs to absorb the "natural" growth of the labor force. This tends to hold down wages and to push workers into the lower-paying service industries.

#### Overview: 1960-1968

Table 3.12 summarizes the sources of changes in per capita personal income, measured in 1958 dollars, for Montana and the United States over the eight years 1960-1968. This table is comparable to table 3.8, which showed the sources of change between 1950 and 1960.

Between 1960 and 1968, Montana per capita personal income in 1958 dollars rose \$491, or \$241 less than the \$732 increase in the national average. All but two of the factors shown in the table contributed to Montana's slower growth rate. The most important exception was participation income per worker in agriculture. Even though it increased less rapidly in Montana than it did nationally, the greater relative importance of agriculture in the state meant that this factor contributed more to Montana's increasing per capita personal income than it did to the nation's.

As the second line of table 3.12 shows, it was Montana's very slow increase in participation income per worker outside agriculture,



TABLE 3.12

Factors Accounting for Changes in Per Capita Personal Income  
 Montana and United States  
 1960-1968  
 (1958 Dollars)

	<u>Montana</u>	<u>United States</u>
1. Change in agricultural participation income per worker	\$+ 46	\$+ 51
2. Change in civilian nonagricultural participation income per civilian worker	+198	+407
3. Shift of civilian employment to nonagricultural industry	- 2	+ 24
4. Change in proportion of population employed in civilian industry	+ 75	+ 71
5. Total change in civilian participation income per capita	\$+305	\$+538
6. Change in military income per capita	+ 21	+ 17
7. Change in property income per capita	+109	+150
8. Change in transfer payments per capita	+ 85	+ 96
9. Less: change in personal contributions for social insurance per capita	(+ 29)	(+ 45)
10. Total change in per capita personal income	\$+491	\$+732

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Source: Montana Economic Study.

Note: Details may not add to total because of rounding.



exacerbated by the lesser importance of nonagricultural employment, that did most to account for the relatively slow growth of per capita personal income.

Again during the 1960s, the shift of Montana's employment away from agriculture caused per capita personal income to fall. But in this case the effect, shown on line 3 of table 3.12, was very small, since the difference in income per worker between agriculture and nonagriculture had narrowed considerably by 1968. Nationally, on the other hand, the continued shift of employment away from agriculture had a positive influence on per capita personal income, because participation income per worker in agriculture remained well below the corresponding figure for nonagricultural workers.

Per capita property income and income from transfer payments, shown in lines 7 and 8, also rose less rapidly in Montana than they did nationally during the 1960s. This represented a distinct change from the earlier decade, when the above-average growth from these two income sources had helped to narrow the difference between the state and national increases in per capita personal income.

#### SUMMING UP

The statistics on personal income growth in Montana tell a cheerless story. They reveal a failure of the state's economy to achieve more than a diminutive share of the prosperity of the national economy in the last 18 years. In general, they indicate that Montana's economic fortunes are tied to those of the nation, in the sense that Montana's economic growth picked up during the 1960s as national prosperity mounted. But Montana trends were a pale reflection of





national trends, and both total and per capita personal income fell steadily and sharply relative to the national figures.

The difficulties of agriculture dominated developments of the 1950s. During the 1960s, as the decline in agricultural income became less severe (and as real income per agricultural worker actually managed to increase modestly), the slow progress in non-agricultural industries came into sharper focus as a root cause of the state's problems. The diversification of economic activity away from heavy dependence on farming and ranching did not, then, serve to eliminate the gap in real income growth rates between Montana and the nation as a whole.

The basic explanation of Montana's poor performance is that the markets for Montana's most important productive resources--labor and land--were deteriorating relative to national markets for productive resources. Crop and livestock prices plummeted in the early 1950s and fluctuated at low levels during the 1960s (although toward the end of the latter decade livestock prices, at least, showed some recovery). Copper prices also declined (here again, there was an increase in the late 1960s). The surplus of farm labor and the slow growth of nonagricultural jobs made workers surplus commodities, and unemployment in Montana remained well above the national average during most of the period. The rapid out-migration of workers is one compelling piece of evidence that labor was worth more elsewhere. The dismal statistics on participation income per worker are corroborating evidence of the same fact.

Personal income statistics are not perfect measures, either of economic activity in the state or of the welfare of Montana's residents.



But the story they tell is so one-sidedly gloomy that no amount of hypothesizing about their imperfections can turn the picture of Montana's economy into a rosy one.



## CHAPTER 4

### Projections of Employment and Income in 1980

This chapter sets forth our projections of employment and income in Montana for the year 1980. Foretelling the future is hazardous business, and no one would be more surprised than we if our projections for 1980 turned out to be on the button. What they represent is our own judgment based on patterns in the past and what we know now. New developments, new information on past events, and new insights into what makes Montana tick will immediately begin to render our efforts obsolescent, and, ultimately, obsolete. But surely in the planning of state policy it is worthwhile to set down explicitly what seems, at present, to be the most likely future course of the state's economy.

Our projections for Montana's economy take advantage of the national and regional economic projections for 1980 published by the National Planning Association (NPA), a private, nonprofit organization based in Washington, D.C. NPA has been making economic projections



for the nation and for individual states for many years, and their work provides an invaluable starting point for our own efforts. The NPA projections have the great virtue of internal consistency--each particular element dovetails with the other elements, and they sum to a consistent total.

For the most part, our own Montana projections are based on the assumption that NPA's projections for the national economy in 1980 are accurate. But the Montana projections set forth below are ours, not NPA's. The NPA projections for states do not--indeed they cannot--take into account the myriad subtle forces at work in any region. NPA intends them to serve mainly as a point of reference from which more meticulous regional projection work can be done.

#### The National Outlook for the Next Decade

The National Planning Association's projections of economic growth during the 1970s are optimistic. As NPA sees it, rapid labor force growth will combine with successful national policies aimed at full employment, producing a vigorous expansion. By 1980, gross national product (GNP), measured in current (1980) prices, will be nearing \$2 trillion, up from the present (1970) level of nearly \$1 trillion. The growth of real GNP (that is, GNP after correction for price level changes) is projected to be 4.2 percent per year between 1968 and 1980, slightly below the 4.8 percent average annual rate of increase for 1960 to 1968, but still high by historical standards, and well above the 3.2 percent average annual growth rate for the decade 1950-1960.

Employment is expected to grow slightly faster between 1968 and 1980 than it did between 1960 and 1968, while the annual rate of population increase is expected to decline.





Price inflation, measured by the implicit price deflator for personal consumption expenditures (see Chapter 5), is expected to average 2.3 percent per year. This is somewhat more than the average annual rate of inflation for the entire period 1960-1968, but far below the rate of increase during 1969 and early 1970.

If it is granted that 2.3 percent per year is a moderate rate of inflation, the NPA's answer to whether full employment and reasonably stable prices are compatible is a clear "yes." Unemployment is expected to average 3.8 percent of the civilian labor force during the first half of the decade, and 3.7 percent during the last half. (In 1968, unemployment averaged 3.6 percent, but it averaged 4.5 percent in 1965, the year before the national prosperity of the 1960s began to fall apart.)

NPA points out that maintaining low unemployment will probably be easier in the coming years than it has been in the past. For one thing, a declining proportion of the labor force will be made up of teenagers (whose unemployment rates are typically higher than average). For another, NPA expects considerable success from efforts by government and private industries to reduce unemployment and low productivity among nonwhite workers.

As NPA sees it, by 1980 the federal government will be out of its present financial bind. Tax revenues--especially from levies on individual and corporation incomes--are expected to increase rapidly as a result of sustained economic prosperity. Moreover, NPA projects further increases in payroll taxes for Social Security. These additional revenues are expected to produce a surplus in the federal budget, despite rather rapid increases in federal government outlays for domestic programs and



grants-in-aid to states, and a moderate increase in defense outlays. (The number of armed forces is expected to decline to 2.8 million in 1980, down from about 3.5 million in recent years.)

Such a federal surplus would make the government a net lender in the capital markets, and should contribute, if and when it develops, to a stimulation of the housing industry. Recent low levels of housing starts have been the result of reduced availability, and higher cost, of mortgage credit. Further help for housing would come from a moderation in the growth of business investment in plant and equipment foreseen by the NPA, which would hold down the growth of business borrowing. If both government and business credit demands are moderate, the housing construction industry would benefit, and Montana's lumber industry might reasonably look forward to substantially better markets than prevailed during late 1969 and early 1970.

#### The Pattern of Output Growth

According to NPA's projections, real gross national product will grow at an average rate of 4.2 percent per year between 1968 and 1980, slightly less than the 4.8 percent annual growth rate experienced between 1960 and 1968, but well above the average rate of increase during the 1950s.

The pattern of growth--that is, the distribution of growth among industries--is also expected to be different between 1968 and 1980 than it was between 1960 and 1968. The growth rate of manufacturing output is expected to decline somewhat. The rate of growth of agricultural output is expected to increase slightly, as is that of metal mining. The output of railroads is expected to decline slightly,



while other modes of transportation are expected to grow very rapidly. Output in wholesale and retail trade is expected to grow somewhat more slowly than it did from 1960 to 1968, while output of both the service industries and state and local government is expected to grow at recent past rates.

#### Employment Growth Pattern

Rapid increases in output per worker are expected to continue in most sectors, particularly in the goods-producing industries, including agriculture and mining. In the service industries--defined broadly to include transportation, trade, finance, and government--rates of increase in output per worker are expected to remain somewhat below those for the goods-producing industries.

Growth of employment in a given industry tends to be more rapid as the output of that industry grows, but less rapid as output per worker rises. If, in a given industry, output per worker were expected not to increase at all, and total output of that industry were expected to grow by, say, 4 percent per year, then the industry's employment would have to grow by 4 percent per year. But if output per worker were expected to rise by, say, 3 percent per year, then employment would have to grow by only 1 percent annually to produce a 4 percent annual increase in output.

NPA expects output per worker to increase more rapidly than total industry output in agriculture, mining, primary metals, lumber and wood products, and railroads between 1968 and 1980. In all four of these industries, therefore, the projected number of jobs nationally in 1980 is lower than the number in 1968. (Most of these industries also showed employment declines between 1960 and 1968, but the average annual rates of decline projected for 1968-1980 tend to be somewhat higher.) These



four industries (along with the federal government) account for the bulk of Montana's primary employment.

In all of the derivative industries, on the other hand, NPA expects employment to increase between 1968 and 1980. Generally, however, the projected average annual percent rates of increase are lower than were experienced during 1960-1968. For wholesale and retail trade, the projected declines in rates of job growth are substantial.

Although these data cannot be applied directly to Montana, it is clear that the national projections indicate a general continuation of the trends of the 1950s and 1960s, when employment gains tended to be low or negative in most of the primary industries that are important in the state. The striking exception is federal government civilian employment, which is expected to rise sharply.

#### PROJECTIONS FOR MONTANA

The National Planning Association also projects population, employment, and income for states. Although we take NPA's projections as our starting point, our own projections of the Montana economy in 1980 differ markedly from those of NPA. Whereas NPA foresees, by 1980, a reversal, or near-reversal, of the state's downward trend relative to the nation in terms of population, total personal income, and per capita personal income, which they ascribe to a rapid increase of employment opportunities in the state, we contemplate no such happy circumstance.





Rather, we anticipate that heavy out-migration of population will continue, because job opportunities in Montana will continue to grow at a sluggish pace. Largely as a result of the slack in the Montana job market, but also because of further rough sledding for the state's agricultural sector, we expect per capita personal income of Montanans to rise more slowly than the national average.

We shall take up first the outlook for total jobs and population in Montana. Details of the employment outlook will then be examined and, finally, income projections set forth.

#### Population and Employment in 1980

Table 4.1 shows our projections of Montana's population and civilian employment for 1980, together with historical data for 1950, 1960, and 1968. (The 1960 and 1968 data have been adjusted to exclude the direct effects of strikes in the copper industry.)

Our projections indicate that Montana's total resident population will increase by 29 thousand between 1968 and 1980, to a level of 725 thousand in the latter year, an increase of 4 percent. Total civilian employment is expected to increase 24.0 thousand, or 9.4 percent, to a level of 278.4 thousand in 1980.

We estimate that, in the absence of any migration, the "natural" growth (births minus deaths) of the state's population between 1968 and 1980 would be about 98 thousand. The projections in table 4.1, therefore, imply continued heavy net out-migration.

For the 50 states combined, resident population is projected by NPA to reach 234.5 million in 1980, up 17 percent from 1968. Similarly, NPA foresees a growth of employment, nationally, by 21



TABLE 4.1  
Resident Population and Total Civilian Employment  
Montana, 1950, 1960, 1968 and Projected 1980

	Thousands of Persons or Workers			Percentage Change			
	1950	1960	1968	Projected 1980	1950- 1960	1960- 1968	1968- 1980
Resident population (July 1)	593	679	696	725	+14.5	+2.5	+4.0
Total civilian employment (average monthly)	228.5	256.9 <sup>a</sup>	254.4 <sup>a</sup>	278.4	+ 3.7 <sup>a</sup>	+7.4 <sup>a</sup>	+9.4 <sup>a</sup>

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Sources: U.S. Department of Commerce, Bureau of the Census; Montana Employment Security Commission; and Montana Economic Study. Projections by Montana Economic Study.

<sup>a</sup>Adjusted to eliminate effects of copper strikes of 1959-1960 and 1967-1968.



percent. Our projections for the state, it should be emphasized, assume that the NPA's projections for the national economy are essentially correct. Thus, the slow growth we foresee for Montana is not due to any important discrepancy between our expectations for the national economy and those projected by NPA. Rather, they are due entirely to an economic sluggishness in Montana relative to the nation, similar to that experienced during the 1960s.

Our projections for Montana are far below NPA's. NPA projects a state population of 774 thousand in 1980, 49 thousand above our projection. The NPA employment projection for 1980 is 297 thousand, almost 19 thousand above ours.

The NPA works on the assumption, as do we, that people follow job opportunities. The primary reason for the NPA's higher projection of population is, therefore, its more optimistic view of the state's employment prospects. We shall take pains, as we discuss the details of our employment projections, to point out where our figures deviate markedly from the NPA projections for Montana, and to explain why they do.

Out-Migration and the "Job Gap". As explained in our Chapter 2, the slow growth of Montana's population during the 1950s and 1960s reflected the slow increase of jobs in the state. Members of the labor force searching for better opportunities moved out in large numbers, taking their dependents with them. Net out-migration of persons in the labor force during the 1950s was estimated to be about 16 thousand, or about 1,600 per year. During the eight years 1960-1968, net labor force out-migration amounted to about 17.7 thousand, or roughly 2,200 per year. As table 4.2 indicates, we project that



net out-migration of the labor force between 1968 and 1980 will amount to 38.1 thousand, or nearly 3,200 per year.

The reason is, of course, the slow growth of jobs, coupled with a continued rapid "natural" increase in the labor force--the increase that could be expected to occur if there were no migration, in or out. During the 1960s the labor force increased rapidly as the children born during the postwar baby boom began to reach working age. The same force will continue to be at work during the 1970s, both nationally and in Montana.

Table 4.2 also shows the projected "job gap" for 1968-1980. As explained in Chapter 2, the job gap is the difference between the increase in employment required to halt net labor force out-migration and the actual (or in this case, projected) increase in jobs. It is assumed that for net labor force out-migration to be halted entirely, jobs would have to increase fast enough both to absorb the "natural" increase in the labor force and to lower the unemployment rate in Montana to equality with the national unemployment rate.

The "natural" increase in Montana's labor force is projected to be 63.1 thousand between 1968 and 1980. The national rate of unemployment projected for 1980 by NPA is 3.7 percent. The same rate in Montana in 1980 would imply unemployment of 12.2 thousand, assuming no net out-migration of the labor force. This figure is 0.3 thousand less than the amount of Montana's unemployment in 1968, when the labor force was about 267 thousand and the unemployment rate was 4.7 percent. Therefore, the increase in employment required to stop net labor force out-migration between 1968 and 1980 would be 63.4 thousand, the sum of "natural" increase in the labor force and the reduction of unemployment





TABLE 4.2

Projected Montana Civilian Labor Force Migration  
and the "Job Gap," 1968-1980  
(thousands of workers)

	Change in Civilian Employment	+	Change in Unemployment	=	Change in Civilian Labor Force
If no migration	63.4		-0.5		65.1
Actual	<u>23.8</u>		<u>1.2</u>		<u>25.0</u>
	59.6		-1.5		58.1
	"Job Gap" (no migration change in employment less actual change in employment)		Excess Unemployment (no migration change in unemployment less actual change in unemployment)		Labor Force Migration (no migration change in labor force less actual change in labor force)

Source: Montana Economic Study.

Note: The change in unemployment "if no migration" is the change projected to occur assuming Montana's average monthly unemployment rate in 1980 is the same as the national unemployment rate in that year.



necessary to bring the state's unemployment rate in 1980 down to the projected 3.7 percent national rate.

We project, however, that employment will rise by only 23.8 thousand, leaving a job gap of 39.6 thousand, or about 3,500 per year. Given the continued excess supply of labor, we expect Montana's unemployment to remain about 1 percent above the national rate, or 4.7 percent, in 1980. This implies an increase in the number of unemployed to 13.7 thousand in 1980, up 1.2 thousand from 1968. Projected net out-migration of the labor force, shown in column 3 of table 4.2, is therefore 38.1 thousand, the difference between the "job gap" shown in column 1 and the rise in unemployment, shown in column 2.

This heavy labor force out-migration, which is due to the projected slow growth of jobs, is the main explanation for the high level of population out-migration which we foresee. Most migrants will be either members of the labor force or their dependents.

Some migrants, on the other hand, will be retired persons and others who are neither employed nor seeking jobs. It is our guess, however, that annual net out-migration of persons aged 65 and over will be smaller than it has been in the past. We expect fewer Montanans to leave the state when they retire, and more retired persons to move here from other, more crowded places. The results can be expected to show up in the northwestern and south-central regions of the state, both of which, according to our estimates, experienced net in-migration of retired persons between 1960 and 1968.



### Detailed Employment Projections

Table 4.3 shows Montana's civilian employment by industry for 1950, 1960, and 1968, together with projections for 1980. Table 4.4 shows actual changes in employment by industry for the periods 1950-1960, 1960-1968, and projected changes for 1968-1980. The various categories of jobs are divided between primary, or export-oriented employment, and derivative employment, which is directed toward production of goods and services (mostly the latter) for local markets. As Chapter 2 explained, the driving force behind economic growth is primary employment, in the sense that an increase in primary jobs will cause an increase in population and hence in demands for the output of derivative industries. It should be kept in mind, however, that the shift away from primary, and toward derivative, employment which has characterized both the national and the Montana economies since World War II, also promotes local economic growth.

Primary Employment: Continued Decline. We project that total primary employment will fall by 1.8 thousand between 1968 and 1980. This represents a continued deceleration of the annual rate of decline in primary jobs. Between 1950 and 1960, the average annual reduction was about 1,700. From 1960 to 1968, it was about 450. From 1968 to 1980, according to our projections, primary employment will fall by only about 150 jobs per year. As table 4.4 indicates, the major reasons for the further reduction of the annual decline in primary jobs are these: (1) the average annual loss of jobs in agriculture is projected to be about the same as it was between 1960 and 1968, but much lower than it was during the 1950s, and (2) metal mining employment,



TABLE 4.3

Civilian Employment, by Industry  
Montana, 1950, 1960, 1968 and Projected 1980  
(thousands of workers)

	Employment			Projected 1980
	1950	1960	1968	
Primary Employment				
Agriculture	52.8	39.2	33.7	26.0
Lumber and wood products <sup>1</sup>	5.4	7.3	8.9	10.0
Food and kindred products manufacturing <sup>1</sup>	4.2	4.3	4.3	4.6
Primary metals manufacturing <sup>1</sup>	4.0	4.0*	4.4*	4.0
Other manufacturing <sup>1</sup>	4.4	5.0	6.4	8.0
Metal mining <sup>1</sup>	7.8	5.0*	2.9*	4.2
Other mining <sup>1</sup>	2.4	2.9	3.2	3.5
Railroads <sup>1</sup>	14.0	9.0	6.9	4.4
Federal government <sup>1</sup>	8.3	9.9	12.3	16.5
Total Primary Employment	103.3	86.6*	83.0*	81.2
Derivative Employment				
Nonrail transportation, comm., and utilities <sup>1</sup>	7.9	10.0	10.7	11.6
Contract construction <sup>1</sup>	10.5	11.0	11.5	12.3
Wholesale and retail trade <sup>1</sup>	36.7	40.5	45.5	46.5
Services <sup>1, 2</sup>	23.4	30.0	38.1	52.0
State and local government <sup>1</sup>	20.0	28.6	41.0	54.4
All other employment <sup>3</sup>	26.7	30.2	24.6	20.4
Total Derivative Employment	125.2	150.3	171.4	197.2
TOTAL EMPLOYMENT	228.5	236.9*	254.4*	278.4

Sources: Payroll employment from Montana Employment Security Commission; agricultural employment and all other employment estimated by Montana Economic Study. Projections by Montana Economic Study.

Note: Details may not add to total because of rounding.

1. Payroll employment only.
2. Includes finance, insurance, and real estate.
3. All nonagricultural self-employed workers and household workers.

\*Adjusted to eliminate the effects of copper industry strikes on employment in metal mining and primary metals manufacturing in 1959-1960 and 1967-1968.





TABLE 4.4

Change in Civilian Employment, by Industry  
Montana, 1950-1960, 1960-1968, and Projected 1968-1980

	Thousands of Workers			Average Annual Percentage Rate of Change		
	1950- 1960	1960- 1968	1968- 1980	1950- 1960	1960- 1968	1968- 1980
Primary Employment						
Agriculture	-13.6	- 5.5	- 7.7	- 2.9	- 1.9	- 2.2
Lumber and wood products <sup>1</sup>	+ 1.9	+ 1.6	+ 1.1	+ 5.1	+ 2.5	+ 1.0
Food and kindred products manufacturing <sup>1</sup>	+ 0.1	-----	+ 0.3	+ 0.2	---	+ 0.6
Primary metals manufacturing <sup>1</sup>	-----	+ 0.4*	- 0.4*	-----	+ 1.2*	- 0.8*
Other manufacturing <sup>1</sup>	+ 0.6	+ 1.4	+ 1.6	+ 1.5	+ 5.1	+ 1.9
Metal mining <sup>1</sup>	- 2.8*	- 2.1*	+ 1.5*	- 4.5*	- 6.5*	+ 5.1*
Other mining <sup>1</sup>	+ 0.5	+ 0.5	+ 0.5	+ 1.9	+ 1.2	+ 0.8
Railroads <sup>1</sup>	- 5.0	- 2.1	- 2.5	- 4.5	- 3.5	- 3.7
Federal Government <sup>1</sup>	+ 1.6	+ 2.4	+ 4.2	+ 1.8	+ 2.7	+ 2.5
Total Primary Employment	- 16.7*	- 5.6*	- 1.8*	- 1.8*	- 0.5*	- 0.2*
Derivative Employment						
Nonrail transportation, comm., and utilities <sup>1</sup>	+ 2.1	+ 0.7	+ 0.9	+ 2.4	+ 0.9	+ 0.7
Contract construction <sup>1</sup>	+ 0.5	+ 0.5	+ 0.8	+ 0.5	+ 0.6	+ 0.6
Wholesale and retail trade <sup>1</sup>	+ 5.8	+ 5.0	+ 1.0	+ 1.0	+ 1.5	+ 0.2
Services <sup>1, 2</sup>	+ 6.6	+ 8.1	+ 15.9	+ 2.5	+ 3.0	+ 3.4
State and local government <sup>1</sup>	+ 8.6	+ 12.4	+ 15.4	+ 5.6	+ 4.6	+ 2.4
All other employment <sup>3</sup>	+ 5.5	- 5.6	- 4.2	+ 1.2	- 2.5	- 1.6
Total Derivative Employment	+ 25.1	+ 21.1	+ 25.8	+ 1.8	+ 1.7	+ 1.2
TOTAL EMPLOYMENT	+ 8.4*	+ 17.5*	+ 24.0*	+ 0.4*	+ 0.9*	+ 0.8*

Sources: Payroll employment from Montana Employment Security Commission; agricultural employment and all other employment estimated by Montana Economic Study. Projections by Montana Economic Study.

Note: Details may not add to total because of rounding.

1. Payroll employment only.

2. Includes finance, insurance, and real estate.

3. All nonagricultural self-employed workers and household workers.

\*Adjusted to eliminate the effects of copper industry strikes on employment in metal mining and primary metals manufacturing in 1959-1960 and 1967-1968.



which fell sharply in both earlier periods, is expected to increase by an average of more than 100 jobs per year between 1968 and 1980. There are, however, numerous other differences between the projected patterns and past trends, and the next section will take up the various classes of primary jobs one at a time.

Agricultural employment will doubtless continue to decline, both nationally and in Montana, as output per worker continues to increase faster than demand. The National Planning Association projects that between 1968 and 1980 the number of workers in agriculture will fall about 38 percent nationally and 23 percent in Montana. Our own projection of 26.0 thousand agricultural workers in Montana in 1980 also implies a decline of nearly 23 percent over the 12 years.

It is all but inconceivable that the direction of these projections is wrong. The NPA expects U.S. farm output to increase at an average annual rate of 1.2 percent between 1968 and 1980, but it projects a 5.3 percent annual rate of increase in output per worker, somewhat greater than the rate of increase from 1948 to 1968. Our own projections are influenced by the recent study, Food Needs and U.S. Agriculture in 1980, published in 1967 by the National Advisory Commission on Food and Fiber. The authors of this study, Earl O. Heady and Leo V. Mayer, examined the implications for 1980 labor and capital requirements of American agriculture of various assumptions concerning national agricultural policies and export markets.

Their analysis, based on a highly sophisticated multi-regional linear programming model, divides the nation into ten regions. Montana is included in the Mountain region, along with Idaho, Wyoming, Nevada, Utah, Colorado, Arizona, and New Mexico. Another region, the Northern



Plains, includes North Dakota, South Dakota, Nebraska, and Kansas. Actually, eastern Montana's agriculture is more like that of the Northern Plains than the Mountain region, and our use of the Heady-Mayer projections takes this into account.

As Heady and Mayer stress, what happens to agriculture between now and 1980 will depend heavily, even crucially, on national agricultural policy. We cannot pretend to have much insight into this political question. But under all of the alternatives considered by Heady and Mayer, agricultural labor requirements continue to plummet, both nationally and in the Northern Plains and Mountain regions. In most of the cases they consider, the decline in agricultural labor requirements for the Northern Plains between 1965 and 1980 is projected to be in the neighborhood of 30 percent. The decline is typically closer to 20 percent in the Mountain region.

Our own projection for Montana agricultural employment in 1980 works out roughly approximate to an average of the Heady-Mayer estimates for the two regions under various assumptions about farm policy and export markets.

It is worth noting that the projected level of agricultural employment is less sensitive to differing assumptions about agricultural policy than are levels of farm output and prices. In each of the cases they consider, Heady and Mayer foresee declining agricultural employment, although under some assumptions they project a substantial increase in farm incomes. This matter will be brought up in the discussion of projected personal income for 1980.

Our projection of 26.0 thousand jobs in agriculture in 1980 implies an average annual decline in number of farm workers of about



640 over the 12 years 1968-1980. This is slightly less than the estimated average annual loss of about 690 jobs between 1960 and 1968, but is only about half as great as the average decline of 1,360 workers annually during the 1950s, when mechanization was having its greatest impact.

Among Montana's primary industries, lumber and wood products provided a larger increase in employment between 1950 and 1968 than any other sector except the federal government. The growth of the forest products industry in Montana has occurred despite the decline of employment in this sector nationally. Between 1950 and 1968, the number of jobs in logging and wood products manufacturing in the state rose 65 percent while, nationally, it fell 26 percent. Montana's gains, therefore, represented a dramatic increase in the state's share of national employment.

As in most primary industries, the national reduction in forest products jobs reflected the rapid growth of output per worker. The National Planning Association projects a continued decline of employment in the forest products industry nationally, and a continued increase in Montana's share of the total. But the state's share is projected to increase at a slower rate than 1950-1968, and, according to NPA, the number of jobs in 1980 would be a scant 200 above the 1968 level. We, too, foresee a slower rate of increase in jobs in Montana's forest products industry, but the deceleration we project is much less severe than that projected by NPA. Our projection calls for 10.0 thousand jobs in 1980, which represents an increase of 1.1 thousand above the 1968 level.





There still seems to be room for considerable increases in wood products manufacturing in the state. A recent example is the Evans Products Company's particle board plant in Missoula, scheduled to begin operating in 1970. But we share the NPA's view that the growth of Montana's share of the nation's total employment in forest products will not grow as fast between 1968 and 1980 as it did between 1950 and 1968.

Implicit in both the NPA projection and ours is a forecast that the national housing market will be considerably healthier during the later years of the 1970s than it has been recently. We expect the extremely high interest rates of recent periods to moderate, and we also expect that ways will be developed to insulate the mortgage market from the kinds of disruptions it has undergone in the last half of the 1960s. We also assume that significant new federal legislation will be passed to encourage residential construction.

For the food manufacturing industry, NPA projects that nationally, employment will increase somewhat more rapidly than it has in recent years. Productivity per worker is expected to rise only moderately--less than enough to offset a projected 2.3 percent per year increase in output between 1968 and 1980.

Partly on the basis of the projected strength of labor requirements at the national level, and partly on the assumption that Montana will increase its share of national employment in food manufacturing, the NPA projections envisage a whopping 36 percent increase of jobs in Montana's food processing industry. We do not know the basis of NPA's expectation that Montana's share of this industry will increase sharply. We fail, however, to see why, after some 18 years of stability--employment



was 4.2 thousand in 1950 and 4.3 thousand in 1968--the food processing industry should suddenly take off. Accordingly, our own projection calls for only 300 more jobs (to 4.6 thousand) between 1968 and 1980, an increase of 7 percent.

We expect some increase in meat packing as that industry continues to decentralize, and possibly increased employment in dairying and the processing of sugar beets. But for the other categories, which include canning, grain milling, baking, and soft drink manufacturing, we expect continued stability or a decline.

For metal mining, we foresee a reversal of the trend of 1950-1968, when employment, most of which is on the Butte Hill, declined from 7.8 thousand to 2.9 thousand. (The latter figure is adjusted to eliminate the effect of the copper strike that ended in 1968.) The cutback in mining employment did not reflect reduced production; instead a rapid increase in output per worker occurred, largely because of the shift to open-pit mining. Although there are still some underground operations at Butte, most of Montana's copper ore now comes from open-pit operations.

The copper market has improved recently, and employment in metal mining rose sharply in 1969 as copper output was stepped up. Underlying our projection of a 1,300 increase in jobs in metal mining is an assumption that the copper market will remain reasonably strong. If it does, it seems probable that new operations will be undertaken. Presently, several major copper producers are prospecting and testing in various parts of the state. Although no definite commitments have yet been made, we expect that by 1980 three new areas will have been brought into copper production--near Lincoln, Troy, and Nye. In each case, we would guess,



employment in mining and milling will be in the neighborhood of 350-450 workers. There is also a good chance that operations at Butte will be further expanded.

In addition, there is some prospect that Montana's other minerals--most notably tungsten deposits in the northwestern part of the state--will be tapped.

We consider it quite possible that our projection of metal mining employment in 1980 is too low, if as many as three new operations are indeed begun. Over the 12 years between 1968 and 1980, however, new labor-saving technological improvements in the industry will be tending to hold down manpower requirements, and any new operations can be expected to make use of the very latest technology.

Among the uncertainties involved in our projection are international developments, particularly in Chile, where the government has already assumed 51 percent ownership of Anaconda's operation; the strength of world demand for copper, never easy to predict; the success of exploration in other states; and the effects of policies aimed at preserving or enhancing the environment, which will add to the cost of extracting ore.

The National Planning Association does not make separate projections for the different metals in figuring mining employment in Montana. Their projection for the entire mining industry, however, suggests that they do not share our view. Nationally, NPA foresees a continued decline in metal mining employment as productivity per worker advances faster than mine output. For all mining in Montana, NPA projects that jobs will decline by nearly 25 percent. One must assume that a good part of this reduction would be in copper mining. We are not inclined to take too seriously the conflict between our projections and those of NPA, however,



since that organization's methods of projecting regional employment do not take into account detailed local factors.

Our projections point to a continued small increase in employment in other mining, from 3.2 thousand in 1968 to 3.5 thousand in 1980. We expect coal mining employment to rise by about 200 workers, and petroleum and natural gas extraction employment to increase by about 100. Altogether, in 1980, our projections indicate that coal and quarry mining workers will number 1,200 and oil and gas field workers, 2,300. These projections assume that coal production will increase, but that, given the technology of strip mining, the effect on employment will be relatively minor.

Our projections also assume that output of oil and natural gas will rise. For all three energy products--coal, oil, and gas--technological advances will probably cause productivity per worker to rise faster than total production between 1968 and 1980. But our projections imply that Montana nevertheless will continue to increase its share of national production and employment in these industries. How fast the state's share increases will depend, among other things, on what happens in Alaska. If the problems of transporting crude petroleum from Alaskan oilfields to the U.S. are mastered (and we assume they will be), the prospects for any dramatic increases in Montana's productions of energy fuels seem limited. We cannot, of course, pretend to know whether a major new oilfield will be discovered in Montana.

Another important factor conditioning the growth of the energy fuel industries will be the evolution of environmental policies.





These will shape the technology of energy production in ways that are as yet unforeseen. Our projections assume, however, that the heavy use of coal for production of electrical energy will continue. Similarly, we assume that internal combustion engines will still propel at least a large portion of American motorcars by 1980. We parade these assumptions not so much because we have faith in their accuracy as to warn the reader that, whatever their merits, we have made them.

The miscellaneous category "other manufacturing" includes a large number of industries, most of which employ relatively few, if any, Montanans, even though many of these industries are very important nationally. Generally, our projections for employment in this group of industries are lower than NPA's.

Among durable goods, the most important category of the "other manufacturing" aggregate is stone, clay, and glass products. The NPA projections for Montana foresee a 55 percent increase in these jobs, to 1.7 thousand workers in 1980. This is a much faster rate of increase than we have seen in recent years and we doubt that it will occur, though we do expect some increase.

The new missile sites in Pondera and Toole Counties will bring an increase in civilian installation and maintenance personnel. They are included in "ordnance manufacturing" which, in turn, is part of "all other" manufacturing employment.

Among the miscellaneous nondurable goods industries the largest employer is printing and publishing, which accounted for 1,800 workers in 1968, up only 300 from 1950. The NPA projections call for an increase to 2,400 by 1980, but we are more comfortable with a projection of 2,100 for that year. One reason for the difference might be that most of this



employment does not really belong in the primary category since it is related to the production of local newspapers. Since we project a substantially smaller Montana population in 1980 than does the NPA, it is logical that we should expect less employment in printing and publishing.

Three other relatively important components of the "other manufacturing" group are chemicals and allied products (dominated by the Stauffer Chemical Plant in Silver Bow County), paper products (mainly the Boerner Waldorf mill near Missoula), and petroleum refining (dominated by three operations at Billings and Laurel). Our projections assume that employment in chemical manufacturing will not increase between 1968 and 1980, and that increases in jobs in both petroleum refining and paper products will be moderate--on the order of 100 workers in each case.

Railroad employment in Montana dropped sharply during the postwar period, from 14.0 thousand workers in 1950 to only 6.9 thousand in 1968. The National Planning Association does not project railroad employment separately for Montana. Nationally, however, NPA foresees a 37 percent decline in railroad jobs between 1968 and 1980.

Montana's railroad employment has tended to fall at about the same percentage rate as the national total since 1950, and we assume that this relationship will continue to hold. We therefore project that railroad jobs will decline by about 36 percent between 1968 and 1980, to 4.4 thousand in the latter year.

The recent merger of the Burlington, Northern Pacific, and Great Northern railroads into one line will reduce manpower requirements for



the three lines combined. The successor Burlington Northern line indicates, however, that no workers will be laid off. Rather, job consolidation will proceed only as workers retire, die, or leave of their own accord.

In 1950, federal government civilian employment in Montana averaged 8.3 thousand workers, and accounted for 3.6 percent of total jobs in the state. By 1968, federal civilian employment had risen to 12.3 thousand workers, and accounted for 4.8 percent of total employment.

We have classified federal civilian employment as "primary," or export-oriented, jobs. This classification is obviously imperfect; many federal jobs are no doubt designed to serve the local population. The postal service is a good example. But Montana's federal employment has increased in recent years at a rate that is hard to square with the notion that these are derivative jobs. In any event, federal employment in Montana is financed from the outside, in the sense that taxes from Montana are pooled in Washington, not set aside to finance local expenditures.

Between 1950 and 1968, rising federal civilian employment was, along with lumber and timber products, the main force operating to moderate the overall decline in Montana's primary employment. It is likely that this will continue to be so. The National Planning Association projects what is, by historical standards, a phenomenal increase in federal civilian employment in Montana between 1968 and 1980. According to NPA, there will be over 21 thousand federal jobs in Montana in 1980, compared with less than 13 thousand in 1968. The average annual rate of increase implied by this projection is 4.7 percent, a rate that, if sustained, would cause federal employment in



Montana to double every 15 years. Between 1960 and 1968, on the other hand, when federal employment in Montana was rising at what could be considered a rapid pace, the average annual rate of increase was only 2.5 percent, which would lead to a doubling only every 28 years.

The reasons for NPA's projection are not taken up explicitly in its report. But NPA does project a marked acceleration of the rate of growth of growth of federal civilian jobs nationally, together with a moderate increase of Montana's share of the national total, between 1968 and 1980.

We are dubious on both counts. NPA's national projections imply that federal jobs would account for 4.9 percent of total civilian employment in 1980, compared with 3.6 percent in 1960 and 3.7 percent in 1968. (For Montana, NPA projections imply that federal civilian employment would account for 7.5 percent of all civilian jobs in 1980, up from 4.4 percent in 1960 and 4.9 percent in 1968.)

True, programs already in existence will require rapid increases in federal payrolls as they get into full swing, and many new programs will be enacted. And, if the NPA assumptions are correct, federal military employment will stabilize at a level below the present one during the 1980s. This would free a larger share of the federal budget for civilian programs, although defense spending is projected to rise. Also, NPA projections visualize a modest surplus in the federal budget even in the face of the rapid growth of federal civilian employment that they foresee. The reason is that federal personal income tax revenues from existing sources are expected to rise about 1 1/2 times as fast as GNP, and payroll taxes, which finance Social Security, are expected to be raised, as they have been regularly in the past.





It certainly does not appear that the projected rapid increase in federal civilian employment is preposterous. Nonetheless, our own view is that the NPA projections of federal employment, both for Montana and for the nation, will turn out to be too high. Congress will be under great pressure, as we see it, to use the "fiscal dividend" from rapid national economic growth for both tax reduction and massive aid to state and local governments.

We consider a projected increase in federal civilian employment nationally of, say, one-third, or from nearly 3 million in 1968 to nearly 4 million in 1980, to be more reasonable than the NPA's projection of an increase of nearly 60 percent--to 4.7 million federal civilian jobs in 1980. A projection of 4 million jobs would imply a continuation of the 2.6 percent annual average increase that occurred between 1960 and 1968.

For Montana, we also foresee a continuation of the 1960-1968 trend, with federal civilian employment reaching 16.5 thousand by 1980.

Derivative Employment. Derivative industries cater primarily to local markets. To project derivative employment, we first project the number of workers in each derivative industry per 1,000 population. Once we have this information, we can turn to the problem of projecting total population and total derivative employment simultaneously. This section, however, covers only our projections of the number of jobs per 1,000 population for each derivative industry group. These projections are summarized in table 4.5.

Again, we use as a point of departure National Planning Association projections of derivative employment for the nation. We shall explain the major differences between the NPA projections for the state and our



TABLE 4.5

Derivative Employment Per 1,000 Resident Population  
Montana, 1950, 1960, 1968 and Projected 1980

	1950	1960	1968	Projected 1980
Nonrail transportation, comm., and utilities	15.4	14.7	15.4	16.0
Contract construction	17.7	16.2	16.5	17.0
Wholesale and retail trade	61.9	59.6	65.5	64.2
Services <sup>1</sup>	59.4	44.2	54.7	71.7
State and local government	35.7	42.1	53.0	75.0
All other employment	45.0	44.5	55.5	59.1
Total Derivative Employment	211.1	221.4	245.1	272.0

Sources: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Bureau of the Census; Montana Employment Security Commission; and Montana Economic Study. Projections by Montana Economic Study.

Note: Details may not add to total because of rounding.

1. Includes finance, insurance, and real estate.



own as we go along. NPA, as we have noted, projects a much larger population for Montana in 1980 than we do, but here attention is directed to the ratios of derivative employment to population implied by the NPA projections.

As table 4.5 indicates, we expect the overall number of workers in derivative industries to continue to rise relative to population. We project 272.0 derivative jobs per 1,000 population in 1980, up from 246.1 per thousand in 1968. This is a somewhat slower annual rate of increase than occurred between 1960 and 1968, but is considerably higher than the rate of increase during the 1950s.

Most of the increase in derivative employment relative to population shows up in the service and state and local government categories, just as it did during the 13 years 1950-1968. This reflects our expectation that demands for services will continue to increase rapidly, and productivity per worker very slowly, in these sectors. These expectations are shared by NPA, and, as far as we know, by every other expert.

In nonrail transportation, communication, and utilities, the number of workers per 1,000 population is projected to inch up to 16.0 per 1,000 population in 1980, compared with 15.4 per 1,000 in 1968. Our projections of this ratio do not differ substantially from those of NPA.

Contract construction in Montana is expected to provide 17.0 jobs per 1,000 population in 1980, slightly more than in 1968, but slightly less than in 1950. Between 1950 and 1968, the number of contract construction workers per 1,000 population fluctuated between 16.0 and 18.0, with no apparent trend. Our projection puts



the 1980 number in the middle of that range. NPA's projections for the state, on the other hand, imply that it will be in the upper end of the range, at about 17.7 jobs per thousand population.

In recent years, the number of workers engaged in the construction of buildings, including residential housing, has tended to fall relative to population, while the number engaged in other projects such as dams and highways has tended to increase faster than population. We expect this relationship to be reversed during the 1970s, if residential construction increases and highway building subsides somewhat with the completion of the presently planned Interstate Highway System. It is possible, of course, that highway construction will continue unabated, or that other federally-financed projects will expand rapidly enough to offset entirely any slowdown in highway construction. But we do not consider this to be the most likely course of events.

For wholesale and retail trade, the NPA projections imply moderate declines, relative to population, both nationally and for Montana. Our own projections are reflections of the NPA numbers. We expect employment per 1,000 population to decline slightly, from 65.3 in 1968 to 64.2 in 1980.

The downturn in the number of trade employees relative to population represents a reversal of the upswing that occurred during the 1960s, and a partial return to the downtrend that characterized the 1950s. The reason is that NPA expects a faster growth of output per worker between 1968 and 1980 in the face of an essentially unchanged rate of increase in the industry's output.

In services (including finance, insurance, and real estate, along with hotels, personal services, restaurants and a host of others), NPA





projects a continuation of the rapid rise in jobs relative to national population that characterized the 1960s. For Montana, however, NPA projects a slower rate of increase, for reasons we cannot discover. Our own projection is that employment in the service industries will rise to 71.7 per 1,000 population in 1980 from its 1968 level of 54.7 per 1,000. This is slightly less than the increase projected by NPA for the nation as a whole. Our projected Montana ratio is about 17 workers per 1,000 population lower than the national ratio projected by NPA for 1980, about the same relationship that held in 1968.

Our most important difference with the NPA's projection of derivative employment arises in the state and local government category. The NPA projections for Montana imply that there will be about 81 state and local government employees per 1,000 population in 1980, compared with 56.9 per 1,000 in 1968. An increase of similar proportions is projected for the nation as a whole.

Such a rapid escalation is not out of the question. State and local government employment rose very rapidly during the 1960s, and not at all slowly during the 1950s. But we suspect that the NPA projections for Montana are too high. Our own projection is that there will be 75.0 jobs in state and local government for every 1,000 Montana residents in 1980. Even this would imply a 27 percent increase from the 1968 level.

One factor behind the NPA projection is the assumption that federal grants to state and local governments will expand rapidly during the 1970s. This seems likely if the (relative) moderation of defense requirements foreseen by the NPA does occur. The precise impact of increased federal grants on state and local government employment would



depend upon the nature of the grants. Those for specific purposes, such as health care, would probably have a greater impact on the number of state and local workers than would general purpose grants that would allow the money to be for any purpose, including holding down state and local taxes.

Moreover, we think it likely that, no matter how urgent the needs of more rural areas might seem to their residents, most of the new social programs the federal government might underwrite would be aimed at the problems of large cities. In that case, Montana could expect to get less than its pro rata share of federal money allocated to urban programs.

For both the nation as a whole and for Montana, the ratio of school-age population to total population can be expected to decline somewhat during the 1970s. This factor will moderate the growth of teaching jobs in relation to population.

One additional consideration is worthy of note. Our projection implies that in 1980 Montana's state and local government employment per 1,000 population will not be as far above the national average (projected by the NPA) as it has been since 1950. The average wage paid to public employees in the state, which is far below the national average, may have to rise much faster than it has, not only to keep pace with inflation, but to attract and retain the kind of workers that will be necessary as government programs become increasingly complex.

Finally, we expect "all other" employment to continue to fall relative to population during the 1970s, from an estimated 35.3 per 1,000 in 1968 to 28.1 per 1,000 in 1980. This category includes all



nonfarm proprietors and all domestic workers. Projecting it requires a certain amount of nerve, since we are not at all sure what it has been in recent years. (The 1968 number represents simply a semi-informed guess. The findings of the 1970 Census of Population, when released, should provide a fairly solid basis for checking our estimate for 1968, and for gauging the trend between 1960 and 1970.)

#### Projecting Population and Total Employment

We turn now to the problem of projecting total population and number of derivative jobs; the two magnitudes must be determined simultaneously, since each affects the other.

The projection of 272 derivative jobs per 1,000 population, shown in table 4.5, makes projected derivative employment equal to  $.272P$ , where  $P$  is population.

But population in the state in 1980 depends on the employment opportunities in the state. In order to project both derivative employment and population simultaneously, the relation of population to employment must be specified. This requires knowing the labor force participation rate, or the ratio of the number of persons in the labor force to total population, together with the unemployment rate, or the percent of the labor force that is out of work. We have projected that unemployment will amount to 4.7 percent of the labor force in 1980, one percentage point higher than the National Planning Association's projected unemployment rate for the nation. This is about the same differential that has persisted in recent years, and we expect it to continue as long as employment opportunities grow slowly in the state.



The labor force participation rate will depend on the age structure of the population in 1980, and on specific participation rates for each age group.

According to the NPA projections, the ratio of employment to population in Montana will be .384 in 1980. That is, it is expected that 384 of every thousand people living in the state in 1980 will be employed. Assuming a 4.7 percent unemployment rate, the ratio of labor force to population would be about .403.

For the nation, NPA projects total employment of 97,193 thousand, and a total population of 234,462 thousand. The proportion of the population at work nationally would be .415, about 7 percent higher than in Montana. This is about the same relationship that has prevailed since 1960.

Our own projections assume that the implied NPA employment ratio for Montana in 1980 will, in fact, hold. We have rechecked this assumption by projecting the state's labor force in 1980 and using age-specific labor force participation rates that rise, over time, at about the same rate that NPA projects for national participation rates. Assuming that the state unemployment rate will be 4.7 percent, the resulting projection of the ratio of employment to population is very close to the ratio of .384 projected by NPA for 1980. We have therefore used the NPA ratio in our own work.

Given an employment-population ratio of .384, we may write, for one of our equations to be used in solving for projected population and employment,

$$(1) \quad E_t = \frac{P_t}{.384},$$





where  $E_t$  is total employment and  $P$  is population in 1980. This implies that in 1980 there will be slightly more than 2.6 persons for every job in the state.

Our second equation is

$$(2) \quad E_t = E_b + E_d,$$

where  $E_b$  is primary employment and  $E_d$  is derivative employment. Letting  $\sigma$  stand for the ratio of derivative employment to total population, (2) may be written

$$(2a) \quad E_t = E_b + \sigma P.$$

Substituting the right hand side of equation (2a) into equation (1) and rearranging terms allows us to write the following relationship which satisfies both equations:

$$\begin{aligned} (3) \quad P &= \frac{E_b}{(.384 - .272)} \\ &= \frac{E_b}{(.112)} \end{aligned}$$

We project that  $E_b$ , or primary employment, will be 81.2 thousand. Substituting this value into equation (3) and solving for  $P$  gives a projected 1980 population of 725.0 thousand people. At this level of population, derivative employment would be 197.2 thousand, giving a total employment level of 278.4 thousand.

Our 725 thousand population projection is some 49 thousand lower than the NPA's Montana figure for 1980. We want to inquire into the main reasons for this difference. This will enable the reader to assess the importance of our departure from the NPA projections and will, at the same time, indicate how what appear to be small errors at one stage of the projecting process can lead to large errors in the final results.



The main differences between our projection of primary employment and NPA's relates to federal government employment. NPA projects a level of federal civilian jobs about 5 thousand higher than we do. Let us assume NPA is right and we are wrong.

Primary employment, represented by  $L_p$  in equation (3) would then be 86.3 thousand. Projected population for 1980 would rise to 770.5 thousand. Derivative employment at this level of population would be 209.6 thousand, and total employment would be 295.9 thousand.

Thus, accepting NPA's projection of federal civilian employment for 1980 would bring us within about 3 thousand of NPA's population projection, and within about 1 thousand of NPA's total employment projection.

In the derivative employment category, our main difference with NPA again relates to government employment. We project 75 state and local government workers per 1,000 population in 1980, whereas the NPA projection implies about 81 state and local government employees per 1,000 population in that year. Supposing that NPA is right, the value of  $\sigma$  in equation (3) would rise to .278. If primary employment in 1980 were 86.3 thousand (that is, using NPA's higher projected federal civilian employment) the projected total population in 1980 from equation (3) would be 814.2 thousand, or 40,400 higher than the number projected by NPA. Derivative employment would then be 226.3 thousand, and total employment, 312.6 thousand.

Thus, if NPA's projections for federal and state and local government employment are used along with our own projections for private employment, the resulting projections of both population and total employment would be even higher than those actually published by NPA. In fact, they would be high enough to imply a small net in-migration between 1968 and 1980.



This implies that our projection of private employment are somewhat higher than NPA's. For private primary employment, the main difference is that we expect mining employment to rise by 1.6 thousand, whereas NPA expects it to fall. For private derivative employment, the main difference is that we project a substantially larger number of service workers per 1,000 population.

The foregoing discussion should make it clear that both population and derivative employment projections are extremely sensitive to errors in the projections of (a) primary employment and (b) derivative employment per 1,000 population. Given our projection of 272 derivative workers per 1,000 population, and error of 1,000 in the primary employment projection results in an error of about 8.9 thousand in the projection of population, and an error of about 2.4 thousand in the projected level of derivative employment.

On the other hand, assuming that our projection of primary employment is correct, an error of only 2 derivative workers per 1,000 population would throw our projected population figure off by about 13 thousand, and our projection of derivative employment by about 5 thousand.

Given such sensitivity of the final projections of population and employment to errors in the projections of primary employment and derivative jobs per 1,000 population, we are rather humble about our own projections.

The above exercises carry another lesson. They indicate that policies aimed at promoting employment in Montana would have substantial effects even if their initial impacts seemed small. For example, using our projection of 81.2 thousand primary jobs in 1980, and 272 jobs per 1,000 population in derivative industries, the resulting projected



population for 1980 is 725.0 thousand, with total employment of 278.4 thousand. An increase between 1970 and 1980 of 100 more primary jobs per year would, according to our approach, lead to an increase in 1980's population of 8.9 thousand, and in derivative employment of nearly 2.4 thousand. (This calculation assumes that the unemployment rate is not affected. To the extent that the increase in jobs resulted in a reduction of unemployment, the induced changes in both population and derivative employment would be smaller.)

#### MONTANA'S PERSONAL INCOME IN 1980

The employment projections for 1980 set forth above must be considered pessimistic. The same can be said of our projections of personal income. If our employment and population projections are even approximately correct, the state's total personal income is bound to fall as a proportion of the national total. This would be so even if Montana's per capita personal income were to rise substantially faster than the national average.

But much more important, so far as the economic welfare of Montanans is concerned, is that we expect the rate of increase in per capita personal income of Montanans to continue to lag behind the growth rate for the nation, with the result that by 1980, Montana's per capita income will be only about 79 percent of the national average, or well below the 86 percent figure for 1968.

We begin by considering the National Planning Association's projections of personal income for Montana and the nation as a whole in 1980. NPA's projection for Montana provides no detailed breakdown of





personal income by type. Furthermore, it is not possible to tell just how the projection was made.

For 1980, NPA projects total personal income of Montanans at \$2,884.1 million in 1958 dollars, up 69 percent from 1968. For the nation as a whole, the projected increase over the 12 years is 71 percent. Clearly, NPA expects the gap between Montana's income growth and the nation's to narrow, and in fact, almost disappear.

One reason, of course, is that NPA expects employment and population in Montana to grow at rates much more nearly equal to those for the nation as a whole between 1968 and 1980 than they did between 1950 and 1968. NPA also expects the lag in the growth of Montana's per capita income to disappear.

Between 1950 and 1968, it will be recalled, per capita personal income of Montanans fell from 108 percent to only 86 percent of the national average. Between 1968 and 1980, NPA expects Montana's per capita personal income in 1958 dollars to rise 51 percent, from \$2,470 to \$3,727. Nationally, real per capita personal income is expected to rise only 46 percent. Thus, although the Montana figure would still, by 1980, be only 89 percent of the national average, the gap would have been narrowed slightly, reversing the trend of the 1950s and 1960s.

Although NPA does not provide any detailed explanation of their projections of personal income for individual states, their projection for Montana is not inconsistent with their forecast of a rapid growth of the state's job markets. But as was explained earlier in this chapter, we do not share NPA's rosy view of Montana's job market in the 1980s. The main reason is that we project a much slower growth of government employment.



Given our more pessimistic appraisal of the job outlook, it is not surprising that we project a much slower rise in both total and per capita personal income for the state. According to our projection, the "natural" increase in the labor force will continue to exceed substantially the growth in jobs, which means that workers will be surplus commodities in Montana. This will do two things--encourage net out-migration, slowing population growth, and hold down the growth of participation income per hired worker. Additionally, we expect the incomes of both farm and nonfarm proprietors to continue growing less rapidly in Montana than in the nation as a whole.

Table 4.6 shows our projections of Montana's total and per capita personal incomes for 1980. Also shown are NPA's projections for the United States as a whole. Over the 12 years 1968-1980, we expect Montana's total personal income, measured in dollars of 1958 purchasing power, to increase from \$1,719 million to \$2,415 million, or at an average annual rate of 2.9 percent. For the United States as a whole, NPA projects an annual rate of increase of 4.6 percent.

We project that per capita personal income of Montanans, again measured in 1958 dollars, will increase at an average annual rate of 2.5 percent, reaching \$3,331 in 1980 (see table 4.6). This figure is only 79 percent of NPA's projected U.S. average of \$4,204. (The NPA projection implies a 3.2 percent average annual rate of increase in real per capita personal income for the nation as a whole.) Thus, we expect Montana's per capita income growth to continue to lag substantially behind the national average.

We do, however, expect the difference between the U.S. and Montana growth rates to continue to narrow somewhat. For 1968-1980, our projected



TABLE 4.6

Total Personal Income and Per Capita Personal Income  
Montana and United States, 1960, 1968, and Projected 1980  
(1956 Dollars)

	Total Personal Income				Per Capita Personal Income					
	Millions of Dollars or Percent		Average Annual Percentage Rate of Change		Dollars or Percent		Average Annual Percentage Rate of Change			
			1960-1968	1968-1980			1960-1968	1968-1980		
Montana	\$ 1,544	\$ 1,719	\$ 2,415	3.1	2.9	\$1,979	\$2,470	\$3,531	2.8	2.5
United States	\$587,489	\$576,477	\$985,644	5.1	4.6	\$2,155	\$2,885	\$4,204	5.7	5.2
Montana as a percentage of United States	.55	.50	.25			92	86	79		

Sources: U.S. Department of Commerce, Office of Business Economics, and Montana Economic Study. Montana projections by Montana Economic Study. United States projections by National Planning Association.

Note: United States data includes Alaska and Hawaii.



rate of growth in Montana's per capita income is 0.7 percentage points below the NPA projection for the nation as a whole. Between 1960 and 1968, the difference was 0.9 percentage points. Between 1950 and 1960 it was a dismal 1.7 percentage points.

Table 4.7 spells out the details of our projections of Montana's per capita personal income in 1980. Again, the figures are in 1958 dollars.

The table indicates that we expect all of the components of per capita personal income to rise more slowly between 1968 and 1980 than they did between 1960 and 1968, a period of unusually rapid growth. NPA, it should be noted, projects similar reductions in the growth rates of each of these components of per capita personal income for the nation as a whole.

The most important component shown in the table is civilian participation income. We expect it to rise, on a per capita basis, at a rate of 2.2 percent per year, in real terms. This is only slightly below the 2.3 percent annual rate of advance recorded between 1960 and 1968.

Military income per capita, a minor element in the overall picture, is projected to rise only 2.9 percent per year in real terms. This is well below the 5.1 percent rate of increase recorded during the first 8 years of the 1960s. The projection is quite arbitrary. We assume that the number of armed forces stationed in Montana will not change between 1968 and 1980, and that income per member of the armed forces will rise at the same rate as real per capita personal income rises nationally. In view of NPA's forecast that the number of armed forces will decrease for the nation as a whole, we consider it unlikely that there will be any large increase in the number stationed in Montana. The new AFM





TABLE 4.7

Per Capita Personal Income, by Type  
Montana, 1960, 1968 and Projected 1980  
(1958 Dollars)

	Dollars		Average Annual Percentage Rates of Change	
	1960	1968	1960-1968	1968-1980
Per capita amounts of:				
Civilian participation income	\$1549	\$1854	\$2597	2.5
Military income	45	64	90	5.1
Property income	281	590	584	4.2
Transfer payments	160	245	400	5.4
Less: personal contributions for social insurance	(55)	(82)	(139)	5.5
TOTAL PER CAPITA PERSONAL INCOME	\$1979	\$2470	\$5531	5.6
				4.5
				2.5

Sources: U.S. Department of Commerce, Office of Business Economics and Montana Economic Study.  
Projections by Montana Economic Study.

Note: Details may not add to total because of rounding.



installations in Pondera and Toole Counties will have to be manned, but at the same time, we expect the number of military personnel stationed at Malmstrom Air Force Base near Great Falls to decline somewhat. (There is, of course, always a possibility that Malmstrom will be closed, but we do not think it likely.)

In any event, the relative unimportance of military income for the state as a whole makes it unlikely that our projection of per capita military income could be the source of much error in the projection of total per capita income.

For per capita property income, we project an annual increase, in real terms, of 3.4 percent, compared with a 4.2 percent rate of advance between 1960 and 1968. NPA's corresponding projections for the nation as a whole imply that real per capita property income will rise 3.8 percent per year between 1968 and 1980, down from a 4.8 percent growth rate between 1960 and 1968.

We project that transfer payments per capita will increase 4.2 percent per year in Montana from 1968 through 1980, compared with a 5.5 percent rate of advance between 1960 and 1968. Our projected rate of growth of this component for the state is the same as that projected by NPA for the nation as a whole.

Finally, we project an annual rate of increase of 4.5 percent in Montana's per capita contributions for social insurance. This item, of course, is deducted in arriving at total personal income. Again, the projected rate of growth for Montana is the same as that projected by NPA for the nation as a whole.

The Growth of Participation Income. The critical importance of per capita participation income can be seen by considering the fact



that our projected average annual rate of growth of total per capita personal income is 2.5 percent, even though all of the elements of that total except participation income are projected to rise considerably faster. Because participation income dominates the total, any major error in our projection of per capita personal income is likely to arise from an erroneous projection of participation income.

NPA's projections of participation income for the nation as a whole give only scanty guidance on this matter. No separate estimates are provided for either agricultural or military participation income. It is to be expected, however, that participation income from agriculture will continue to change at a rate different from nonagricultural participation income. The difference is important for Montana, where income from agriculture bulks abnormally large in the overall total. We have therefore provided separate projections for the agricultural and nonagricultural elements.

Table 4.8 shows our projections of participation income per worker in the agricultural and nonagricultural civilian sectors, along with the derivation of projected per capita civilian participation income. Again, the figures are in 1958 dollars.

It might first be noted that we project an average annual rate of increase in participation income per worker, for both sectors combined, of 1.7 percent. This is the same as the rate of increase for 1960-1968. As table 4.8 shows, however, participation income per capita is projected to grow at a higher average annual rate (2.2 percent), much as it did between 1960 and 1968. The difference between average rates of growth of participation income per worker and per capita is accounted for by the changing ratio of employment to population. We expect that ratio to rise between 1968 and 1980, as it did between 1960 and 1968.



TABLE 4.8

Civilian Participation Income Per Worker  
Montana, 1960, 1968, and Projected 1980  
(1958 Dollars)

	1960	1968	1980	Average Annual Percentage Rate of Change	
				1960-1968	1968-1980
a. Agricultural participation income per worker	\$4537	\$5404	\$8404	2.2	0
b. Civilian nonagricultural participation income per worker	\$4435	\$5059	\$6550	1.6	1.9
c. Total civilian participation income per worker	\$4452	\$5097	\$6244	1.7	1.7
d. Ratio of employment to population	.548	.564	.584		
e. Civilian participation income per capita (c x d)	\$1549	\$1854	\$2598	2.5	2.2

Sources: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Office of Business Economics; and Montana Economic Study. Projections by Montana Economic Study.

Note: Civilian participation income per capita shown in table may differ slightly from the product of (c) and (d) because of rounding errors in (c) and (d).





Let us now consider the detailed information in table 4.8, showing agricultural and civilian nonagricultural components of real participation income. For agriculture, we expect no change at all between 1968 and 1980. No separate projection of agricultural participation income was made by NPA, either for Montana or for the nation as a whole. Between 1950 and 1960, it will be recalled, real participation income per worker in agriculture fell at an annual rate of 0.6 percent for the nation and at a 2.7 percent annual rate for Montana. This decline was reversed during 1960-1968, when real participation income per worker in agriculture rose at average annual rates of 5.0 percent nationally and 2.2 percent in Montana. The main reason was that the earlier downtrend of agricultural prices was reversed. For the nation as a whole, agricultural prices rose fairly substantially between 1960 and 1968 (more so for the nation than for Montana), and output per worker increased steadily.

NPA projects a decline in farm prices during the 1970s. So, for most of the alternative assumptions about U.S. agricultural policy that it considers, does the report, Food Needs and U.S. Agriculture in 1980, by Heady and Mayer, cited earlier in this chapter.

Assuming that farm prices will, in fact, decline somewhat, we estimate that real participation income per worker in agriculture will increase at an average annual rate of about 2 percent for the nation as a whole between 1968 and 1980, or considerably less rapidly than output per worker, which is expected to rise at an average annual rate of 5 percent. But we expect Montana's growth of agricultural income to continue to lag behind that of the nation, and our projection of no change in real participation income per agricultural worker in Montana is founded on that assumption.



Using NPA projections of changes in output and prices as our basis, we estimate that, between 1968 and 1980, participation income per civilian nonagricultural worker will increase at a 2.7 percent annual rate nationally, the same as the 1960-1968 rate. Again, we expect that Montana will continue to lag behind the national average by this measure, but that the gap will be narrowed somewhat. Between 1960 and 1968, real participation income per civilian worker outside agriculture grew at an average annual rate of 1.6 percent in Montana. For 1968-1980 we project a 1.9 percent average rate of increase.

Our employment projections indicate, of course, that we expect Montana's labor markets to continue to be plagued with excess supply. It might therefore reasonably be argued that we should not expect such an increase in the rate of growth of real participation income per worker outside agriculture. There are two reasons for our slightly optimistic view. The first is that, although participation income per nonagricultural worker rose at an average annual rate of only 1.6 percent between 1960 and 1968, the trend rate of growth, determined statistically by fitting a curve to the data for all of the years 1960-1968, was actually somewhat higher.

The second reason is that we expect workers to become increasingly willing to move out of the state as the income gap widens, and as young persons entering the labor force become increasingly aware of the relative lack of opportunity in the state. Both developments should tend to ease the excess supply of labor, and to keep incomes per worker from falling as fast as they otherwise would.

Overall, table 4.8 indicates the weighted-average annual rate of increase in real participation income per civilian worker for the



agricultural and nonagricultural sectors combined is expected to be 1.7 percent between 1968 and 1980, the same as it was from 1960 to 1968. Because the proportion of the population at work is expected to continue increasing, as it has since 1960, the average annual rate of increase in participation income per capita is expected to be 2.2 percent, or nearly the same as the 2.3 percent rate for the period 1960-1968. These latter figures are the ones that were used in table 4.7 which shows the past and projected sources of change in real per capita personal income.

#### A BROAD PERSPECTIVE ON THE DECADE AHEAD

If growth of population and employment are taken to be indicators of economic health, Montana displayed severe anemia during the 1950s and 1960s. On both counts, the state has lagged far behind the national averages. Out-migration has accelerated as the result of a growing annual job gap--an insufficiency of employment opportunities to absorb the "natural" growth of the labor force.

But employment and population growth are not, in themselves, infallible measures of the prosperity of the residents of a region. Examples can be found of states that have grown only slowly, but whose citizens have prospered. There is, nonetheless, good reason for suspecting that, in general, heavy out-migration signifies serious lack of opportunity.

In Montana's case, the per capita income statistics confirm this suspicion. From 108 percent of the national average in 1950, Montana's per capita personal income has tumbled to 86 percent by 1968. (The relative decline seems even more dramatic if we choose the high point--



1948, when the state's per capita personal income was 114 percent of the national average--as our starting year.)

Our own projections of Montana's future indicate that this stagnation is not about to be reversed. Instead, they indicate that employment will continue to grow very slowly, and that the job gap--and consequent out-migration--will intensify. The root cause will be a continuation of the decline in primary employment--jobs in export industries. It seems unlikely that our projections of total jobs and population can be wildly incorrect unless our projections of this key element are seriously wrong. Otherwise, slow growth of total jobs seems inevitable. And if job opportunities grow slowly, unemployment is almost bound to remain high relative to the national average, and labor to continue to be, relatively speaking, a surplus commodity, as it has been for two decades.

If we are right about the slow growth of jobs, it seems unlikely that per capita income in Montana will be able to hold its own relative to the national average, to say nothing of rising toward equality with it. Although per capita income is not a perfect measure of economic welfare, it is the best single statistical measure we have. It can be taken lightly only by those who utterly reject the predominant value system in America today.

Thus, if our projections are anywhere near the mark, the economic outlook for Montana is decidedly gloomy. Elsewhere in this report we consider what, if anything, might be done to improve matters. Here, in closing the books on our projections for the state as a whole, we should like simply to remind the reader that our projections could be wrong.

Foretelling the future, on paper, takes a fair amount of nerve. The probability of being exactly right is about zero. The probability of being





substantially wrong is uncomfortably large. How many, during World War I, could have predicted the collapse of Montana's economy in the 1920s? How many, before World War II could have predicted the prosperity of the late 1940s?

In a state as small, by economic measures, as Montana, the establishment of one really large new enterprise--one that provided, let us say, 5,000 primary jobs--could upset our projections entirely. Our own experience is that residents of the state, ourselves included, never tire of telling one another what an attractive place this is to live. But for the state really to grow, there must be jobs. And we do not foresee any rapid expansion of jobs in the next ten years.









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